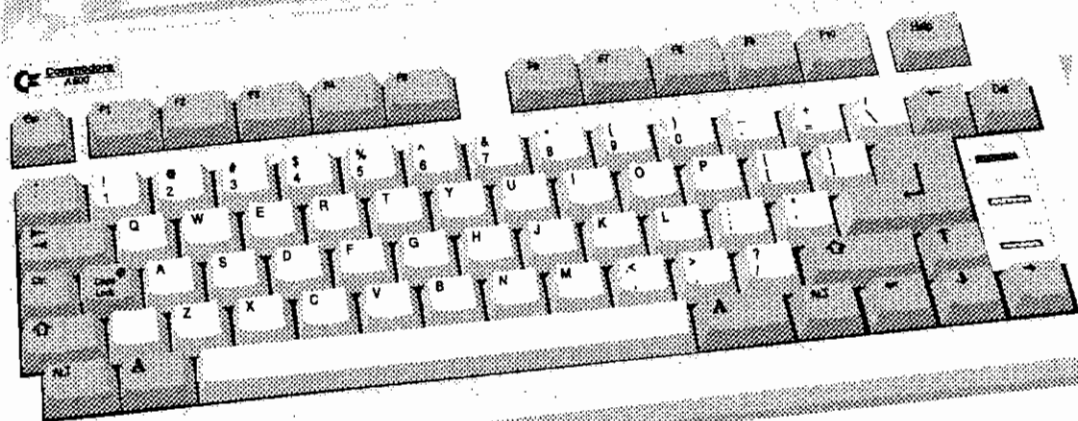
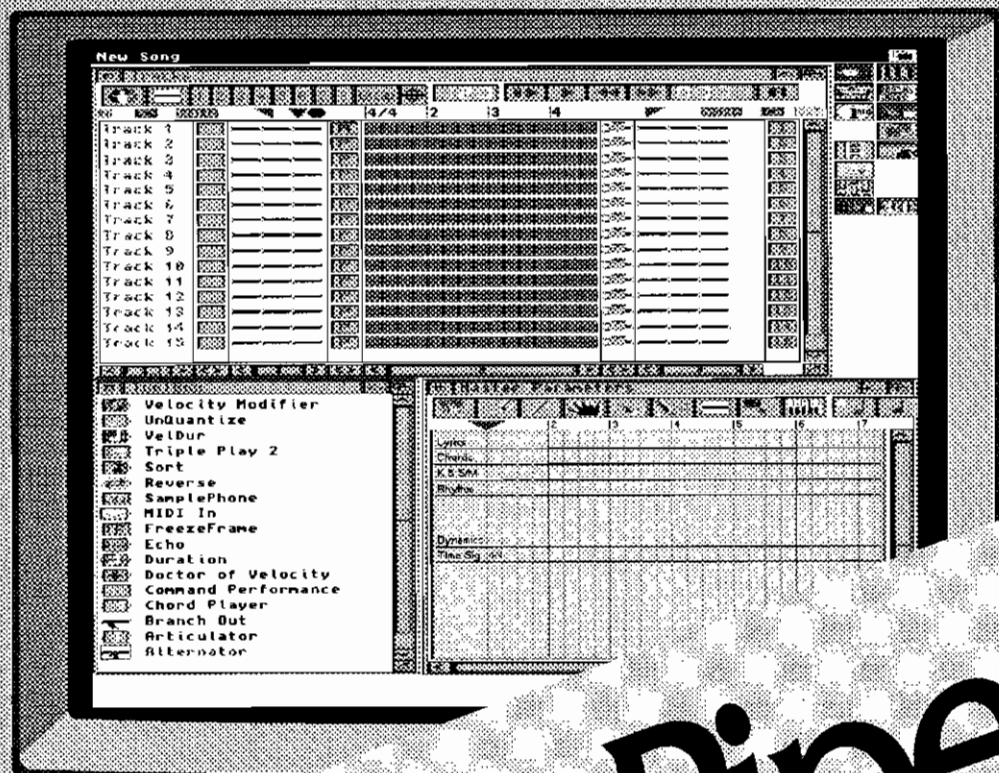
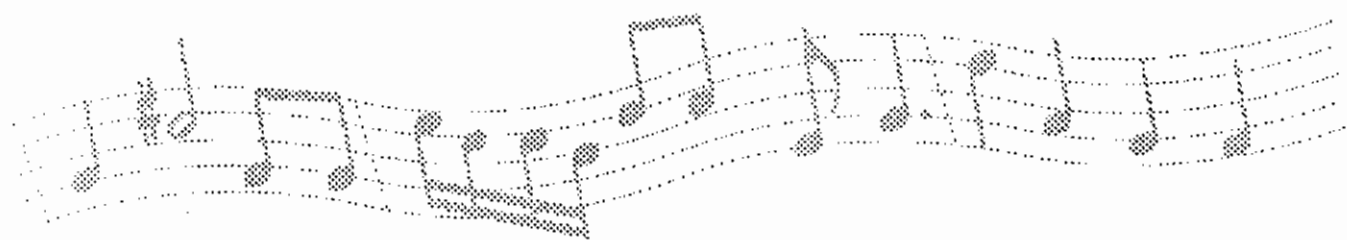


Bars & Pipes



BAR&PIPES

PROFESSIONAL TM



THE
BLUE RIBBON
SOUNDWORKS
LTD



SECOND PRINTING

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table of contents

	License Agreement.....	i - ii
	Welcome Aboard!.....	iii - iv
<i>Chapter One:</i>	Introduction.....	1 - 6
<i>Chapter Two:</i>	Getting Started.....	7 - 8
<i>Chapter Three:</i>	Basic Recording.....	9 - 14
<i>Chapter Four:</i>	Tracks / Transport.....	15 - 30
<i>Chapter Five:</i>	Groups.....	31 - 34
<i>Chapter Six:</i>	Using Tools.....	35 - 42
<i>Chapter Seven:</i>	Create-A-Tool.....	43 - 48
<i>Chapter Eight:</i>	Multi-track Editing.....	49 - 56
<i>Chapter Nine:</i>	Song Construction.....	57 - 62
<i>Chapter Ten:</i>	Timing and Tempo.....	63 - 72
<i>Chapter Eleven:</i>	Note Editing.....	73 - 86
<i>Chapter Twelve:</i>	MIDI Events.....	87 - 98

table of contents

<i>Chapter Thirteen:</i>	Song Parameters.....	99 - 114
<i>Chapter Fourteen:</i>	List Editing.....	115 - 120
<i>Chapter Fifteen:</i>	Clip Editing.....	121 - 126
<i>Chapter Sixteen:</i>	Defining.....	127 - 132
<i>Chapter Seventeen:</i>	Mix Maestro.....	133 - 136
<i>Chapter Eighteen:</i>	Using Accessories.....	137 - 138
<i>Chapter Nineteen:</i>	Printing Notation.....	139 - 142
<i>Chapter Twenty:</i>	The File Requester.....	143 - 144
<i>Chapter Twenty-One:</i>	Glossary.....	145 - 152
<i>Chapter Twenty-Two:</i>	A Reading List.....	153 - 154
<i>Chapter Twenty-Three:</i>	Practice Session (Tutorial).....	155 - 162
<i>Appendix A :</i>	Tools.....	163 - 178
<i>Appendix B :</i>	Accessories.....	179 - 186
<i>Appendix C:</i>	The Add-on Series.....	187 - 194
<i>Appendix D:</i>	MusicWare.....	195 - 200
	Index.....	201 - 214
	Ordering Information.....	215 - 216

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welcome aboard!

A List of Elements

Congratulations, you've purchased a powerful sequencer that expands as you grow as a musician. In the package, you should find the following items:

- One program disk
- One manual
- One registration card
- One binder
- One copy of Quarter Notes, our quarterly newsletter, together with our product catalogue.

If any of these elements are missing, please contact your dealer immediately.

Important Reminder

Please make a backup copy of your program disk and note your version number and serial number. You will need these numbers in order to receive technical support, which can be obtained by calling (404) 377-1514, Monday through Friday during the hours of 1pm to 5pm EST.

An Added Bonus

As an added bonus, we included a few condensed selections from our Bars&Pipes MusicWare Collection*. The MusicWare Collection features hundreds of professionally-arranged song files in Bars&Pipes and Bars&Pipes Professional formats, including pop, jazz and classical pieces. A complete listing as of March 1, 1991 can be found in Appendix D of this manual.

** All song files in the Bars&Pipes MusicWare are for personal use on a personal computer for live performance.*

welcome aboard!



The ReadMe File

Please check your program disk for a file called "ReadMe" in the root directory. If that file exists, it will contain information concerning changes, additions and corrections to this manual; as well as information concerning any changes, bug fixes, and upgraded features to Bars&Pipes Professional itself. The absence of a ReadMe file indicates that there are no changes to report. The file is in ASCii format and you can use any word processor or text editor to read this file.

Our Commitment to Excellence

We have used our best efforts to provide you with a manual that is free from inaccuracies and typographical, spelling, syntax, grammatical and punctuation errors. If you find an error in this manual, please notify us by phone, fax or mail, in order that we may correct it. This is yet another way that The Blue Ribbon SoundWorks, Ltd. is committed to excellence in supporting the Amiga marketplace.

chapter one

introduction

Welcome to Bars&Pipes Professional ("B&P Pro"), the successor to Bars&Pipes, the Amiga's first object-oriented musical composition environment. In pages to come, you will understand why you've made an important musical choice in purchasing this program. With B&P Pro, you're truly bound only by the limits of your own creativity.

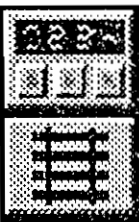
Before you plunge into the program, we suggest you read through this manual thoroughly. This is no ordinary music software and, as such, many of its features warrant an explanation. Feel free to let us know your ideas for future upgrades and additions to the Toolbox." We want to hear from you. Remember, no suggestion is too small!

Please send in your registration card. In exchange, you'll receive thirty consecutive days of free technical support; updates and/or update notices; "Quarter Notes," our quarterly newsletter; ToolBox programming information; and previews of upcoming Tools and Accessories. If we don't hear from you, YOU WON'T HEAR FROM US! 'Nuff said.

Running Bars&Pipes Professional

You can run B&P Pro from the Workbench by double-clicking on its disk icon, then double-clicking on the program icon; this opens B&P Pro with an empty song. Or you can double-click on a song icon; this opens B&P Pro with the selected song, provided the default Tool in the Info window for the song icon has the correct path name for B&P Pro.

When B&P Pro starts up, you'll see the Transport Controls, the Tracks window, and a group of icons along the right side of the screen. These icons represent various unopened windows. This chapter describes some of these icons briefly. Double-click on any icon to open the window associated with that icon.



Bars&Pipes Professional's Six Essential Components

B&P Pro's musical environment consists of six central parts: the Pipeline, the Transport Controls, the Toolbox, the Sequencer, the Editor, and the Accessories. Briefly, let's go over these elements...

1) The PipeLine

The Pipeline, found in the Tracks window, guides your musical input from conception to performance. We call it

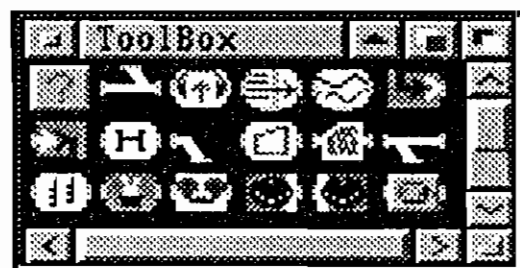


the Pipeline because it actually resembles the kind of plumbing that exists beneath your dwelling. By arranging the pipe and valve icons, you can direct the flow of musical information on a track-by-track basis. You can even connect two or more tracks by using special connector icons. Also, no limit exists as to the number of tracks you may record. You can assign a track name to each Pipeline.

Essentially, the Pipeline consists of two parts: the Input side and the Output side. To understand the flexibility the PipeLine offers, you first must understand the Toolbox.

2) The ToolBox

The Toolbox window contains dozens of modules that process MIDI information as it flows through the Pipeline. We call these modules Tools. Each Tool functions by musically or technically enhancing the notes you've input. A few examples:



- * The UnQuantize tool takes your input and randomly varies its timing. This Tool is especially handy when trying to attain a minimalistic or impromptu feel to your composition.

- * The CounterPoint tool provides interval harmonies to a melodic line you've input. Simply specify the key signature and this Tool embellishes your composition.

- * The Inverter tool allows you to set high and low note boundaries and octaves. Thereafter, you can play a series of chords in whatever way is technically comfortable, yet the chords sound as inversions with proper voice leading. This Tool is especially handy for those whose primary instrument is not the keyboard.

(For you untrained musicians, here's an explanation: Harmonic chord inversion occurs when the lowest note of a chord, the root, is in an upper position instead of in the bass. This is done so that one chord will connect smoothly with the next.)

- * The Keyboard Splitter allows you to divide what you play on the keyboard onto two different tracks. For example, you could direct your right hand, which typically plays the melody, onto the trumpet track and, your left hand, which typically plays the accompaniment, onto the organ track.

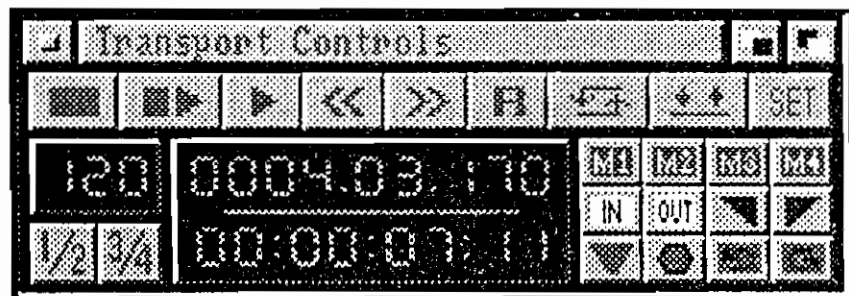
As you can see, some Tools are musical in nature, while others perform more technical tasks. Some provide graphic applications or act as hooks into compatible programs. Still others act as building blocks in the design of Tools you create. You can customize most Tools to your specifications.

One of the most powerful aspects of the Toolbox is its open-ended nature. You can program your own Tools or use Create-a-Tool to assemble MacroTools. Create-a-Tool allows you to combine any configuration of Tools into one, in order to save time when using a common succession of Tools, or to create a specialized Tool of your own design. For example, you could assemble a MacroTool which consists of a Tool that randomly selects and plays notes and rhythms with a Tool that filters out all notes but those in a pre-selected key. In this way, you would achieve a random effect within key and scale/mode boundaries.

Assembling a MacroTool is easy. The Create-A-Tool Window allows you to import your building-block Tools of choice directly from the Toolbox. Drag the appropriate icons onto the Pipeline template and place them in the desired order. Create-a-Tool lets you paint in your MacroTool icon by using the Create-a-Tool easel and palette. After you've painted, named and assigned an identifier to your MacroTool, it automatically becomes part of your Toolbox, to use as you would any other Tool. See Chapter 7 for more information about Create-A-Tool.

3) The Transport Controls

You can use B&P Pro much like a multi-track tape recorder. The Transport Controls window contains "Record," "Play," "Stop," and other familiar buttons, but B&P Pro gives you more precise control than can be found on any "real" tape deck. For example, you can move to an



exact measure, note, or beat; you can also move to an exact position in time by specifying the time in SMPTE format. Finally, you can set flags at important points in your composition and return to any of these points simply by pressing a button.

4) The Sequencer

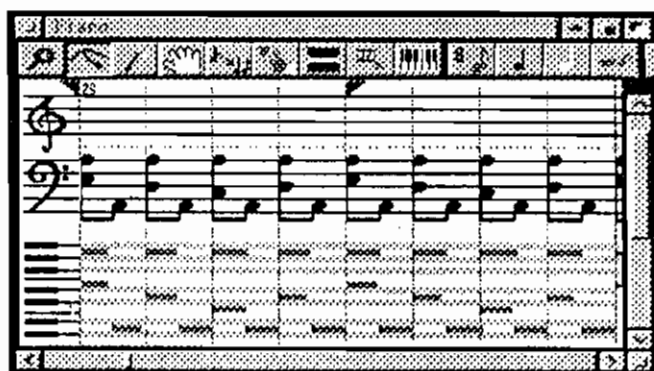
Graphically, the Sequencer sits in the Tracks window between the PipeLines, dividing the input (left) side from the output (right) side. Functionally, the Sequencer records MIDI data which flows in from the



left side of the Pipeline and plays it back, passing it through the right side of the Pipeline. Among other things, the Sequencer allows you to view graphically what you've recorded, as well as cut, copy and paste all tracks at once.

5) The Editor

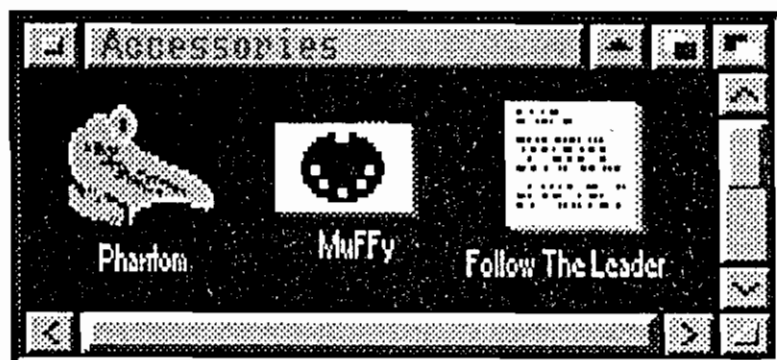
B&P Pro's Editor window was designed with musicians in mind. We give you no less than four ways to edit your composition. If you read music, you can display your song in standard notation on a treble and bass clef. If you do not read standard classical notation, you can display your song in hybrid notation, on a piano roll, or in a MIDI event list.



Regardless of which system you prefer, B&P Pro provides full editing capabilities throughout. We designed the Editor to give you, the composer, as much flexibility as possible in editing your work. We call this the "one-size-fits-all principle." In other words, if you want to draw in a note, we give you that option. If you want to enter the note in the information window, we give you that option. If you want to "get down to the bare metal" and edit individual MIDI events, we let you do it. Or if you want to enter the note from your input device (keyboard, wind controller, etc.), you guessed it, we give you that option, too.

6) Accessories

Add-On Tools and Accessories make B&P Pro an open-ended system. This gives you numerous advantages: flexibility, expandability, and affordability, to name a few. By investing in B&P Pro, you've invested in a future of state-of-the-art musical components. Current and future Accessories will provide the link to the future by enhancing B&P Pro's built-in features.



Some examples of Accessories are Follow the Leader, which prints a lyrics/chord change sheet, ARexx, which lets other programs control B&P Pro through an ARexx port, and MuFFy, which converts between B&P Pro and the MIDI File Format. Some of these Accessories are included with B&P Pro; others are available as part of the Bars&Pipes Add-on Series.

Now that you're familiar with B&P Pro's six main components, we can explain the power of the Tools concept.

Power Tools

B&P Pro's flexibility lies in the interaction between the Pipeline, Sequencer, Toolbox and Editor. To take advantage of this unique flexibility, drag a Tool onto either side of the Pipeline or place it into the ToolPad in either the Tracks or Edit Windows. An example of each scenario:

As previously mentioned, the Pipeline has two sides, the left, which is the input end, and the right, which is the output end. If you drag a Tool onto the input side of the Pipeline, as you press a key on the (musical) keyboard, the note passes through the Tool and is recorded exactly as you played it. To illustrate, if you drag the Echo Tool onto the input side of your bass line track, each time you strike a key on the keyboard, the note sounds with an echo. If you place the Flip Tool next to the Echo Tool, each note sounds with an echo and is flipped over the note axis you specify. All notes processed by Tools placed on the input side of the Pipeline are recorded by the Sequencer into RAM (Random Access Memory), and at your option, onto disk.

The output side of the Pipeline uses the Tools in a different manner. Instead of affecting notes before recording, the Tools affect notes only on playback. At first glance, this may seem trivial, but take a look at some examples and you'll better understand this concept. Suppose you've recorded a track only to find that what plays in your head isn't necessarily translated through your fingers. In other words, the whole thing was a sloppy mess. By dragging the Quantize Tool onto the output side of the Pipeline, you can clean it all up. This time, when you play back that track, the notes will sit neatly on the beat. To take away the Quantize Tool, remove it from the Pipeline and your music is returned to its original state. Or, instead of removing the Quantize Tool altogether, you can readjust the Quantize parameter values. In either case, because Tools on the output side affect notes only on playback, nothing changes in the recorded sequence.

But, you say, most sequencers do that in one way or another! Ah, but here's the difference. While other programs allow you to quantize and "un-quantize," they don't allow you the same freedom with other forms of data manipulation, such as echoing, randomizing, harmonizing, note filtering, etc. B&P Pro's adaptable Pipeline encourages you to experiment and take risks while composing and performing. This flexibility manifests itself during exploration with Tools that provide special effects and stylistic musical changes. By interchanging your options, for instance the Echo Tool for the Arpeggi-8 Tool, you can find the optimal musical treatment, without having to copy a backup track, in case you don't like what you've changed. Best off all, nearly all Tools can be used non-destructively in real-time!

We realize that what you've just read is a lot to absorb in one sitting. Don't worry if

you didn't understand everything. As you read this manual and step-by-step learn to use B&P Pro, you'll feel right at home.

About This Package

Take a good look at B&P Pro's packaging. It's designed to accommodate the program's open-ended nature. To allow you room for future Tools and Accessories disks, we've provided three extra disk pockets. This way, when you expand your B&P Pro configuration, you'll have a place to put your new disks.

For your convenience, the manual is not hard-bound; instead it is organized in a three-ring binder. As you receive updates and add new Tools and Accessories, you can easily insert new documentation in the appropriate place.

About Bars&Pipes Professional's Interface

If you're already a Bars&Pipes user, you'll notice that B&P Pro sports a new "look." Aside from its sleek appearance, B&P Pro's new interface provides you with many conveniences. To begin with, B&P Pro's "look" remains the same whether you run B&P Pro on Workbench 1.3 or 2.0. And, we've organized its major features with windows and icons for the utmost flexibility during usage. We've also added a new standard feature to all of B&P Pro's windows: the Expansion Gadget. The Expansion Gadget, a triangle found to the left of the "window to front" and "window to back" gadgets on the title bar of each window, increases any particular window to its maximum size and will reduce it in size when clicked again. This feature will save you a lot of time spent resizing your windows.

The Preferences Menu

Before starting, there are three options in the Preferences menu of the main screen display that you may wish to set as follows:

WINDOW TO FRONT: When you enable this option, every time you click on a window, it comes to the front.

EXPLODING WINDOWS: When you enable this option, windows "explode" when opened rather than opening instantaneously.

WORKBENCH POINTER: When you enable this option, your Workbench pointer replaces the saxophone pointer.

Getting Up and Running Quickly

For those of you who'd like to acquaint yourselves with B&P Pro right away, turn to Chapter 23, Practice Session (tutorial), for a quick and brief tutorial. Of course, no tutorial is a replacement for actually reading this manual thoroughly and carefully. (Hint. Hint.)

chapter two getting started

Before you can use B&P Pro, you must install it on your Amiga computer. Please read this chapter carefully to ensure a successful start into the world we call B&P Pro...

Installing Bars&Pipes Professional

The B&P Pro release disk is not a bootable disk; therefore if you haven't already done so, turn on your Amiga and boot with your normal WorkBench disk. Since you accomplish installation from the WorkBench screen, place the B&P Pro disk in a disk drive. Two methods for installation exist:

IF YOU HAVE A HARD DRIVE: Open the B&P Pro disk by clicking on it twice. Likewise, open the hard disk by double-clicking on the hard disk icon. One by one, drag B&P Pro, the Tools drawer and the Accessories drawer over to the hard disk window. You must drag all three. In particular, B&P Pro cannot operate without the Tools.

IF YOU HAVE A FLOPPY DRIVE: Make a backup copy of the B&P Pro disk. To do so, follow the normal procedure for copying disks by dragging the B&P Pro icon onto the destination disk icon. You should run B&P Pro from the backup disk and store the original disk in a safe place, for use in case the backup disk ever fails. You are not legally permitted to make copies of the B&P Pro disk for anyone other than yourself. It's also a good idea to create a second disk for saving your compositions by initializing a blank disk. See your Amiga Manual for information on duplicating and initializing disks.

B&P Pro is NOT copy-protected. Although we realize that this makes our company vulnerable to piracy, we made the choice not to punish the honest people with inconvenience. Please remember, though, that to us, Bars&Pipes Professional itself is a piece of music - one that took hour upon hour to make. Please support our effort by discouraging piracy and thinking twice before you copy this program and give it to a friend. We want to be around to serve you for a long time. And for that to happen, we need your support and respect.

Run B&P Pro by double-clicking on its disk icon and then double-clicking on the program icon.

Keeping Track of Tools & Accessories

None of the Tools in the ToolBox are part of B&P Pro itself. Instead, B&P Pro loads Tools from the Tools directory. This feature allows you to add new Tools to the system at any time. B&P Pro lists all the Tools it loads in the file "S:tools". The first time it runs, B&P Pro creates this file and places into it the names of the Tools it has initially loaded.

Every time you add or remove a Tool from the B&P Pro system, B&P Pro updates the "S:tools" file. Because this file is in the S: directory, you must run B&P Pro from the same WorkBench disk each time, since the S: directory is part of WorkBench. If you run B&P Pro from a different WorkBench disk, it loads the original set of Tools and creates a new S:tools file on that WorkBench disk.

Along the same lines, a file called "S:accessories" exists. In this file, B&P Pro stores the names of all Accessories that you have installed.

Running With One Megabyte of RAM

For those of you running with our minimum requirement of one megabyte of memory in your computer, we offer a few suggestions:

* Use the Memory Savers... item from the Preferences menu in the main screen. Four items can be toggled on and off. When the item is selected, you will save memory. The four options and their effects are as follows:

DISABLE UNDO BUFFER: You forfeit the undo option in all windows but the Sequence editor.

CLOSE WORKBENCH: You cannot use the Workbench until you deselect this item.

USE GREY SCALE: The display will not be in color, but will use eight shades of grey.

DISABLE FAST REFRESH: All window redrawing will be slower.

* Remove any unwanted or unused Tools and/or Accessories from their respective windows. (See Chapters 6 and 18.) Each module consumes memory; as such, it's best, in low memory situations, to do without those Tools and Accessories which you are not currently using.

* Use the MIDI In Tool's Control window to filter any unwanted MIDI events. (See Appendix A - Tools.) Unused MIDI events consume precious memory.

If you intend to use B&P Pro to its fullest, we strongly recommend that you upgrade your computer's memory to at least two megabytes.

chapter three **basic recording**

While B&P Pro has many powerful features, the basics are very simple. You can start recording Tracks in minutes, and learn other features of B&P Pro as you need them. As you will quickly see, B&P Pro works much like a multi-track tape deck, but with features no tape deck ever dreamed of having....

The Multi-Track Tape Deck Metaphor

Tracks segment your composition into parts which you record independently, then let you play back any combination of parts. The following example illustrates the multi-track metaphor:

The rock band Hugo and the Poodles records its anthem "Bark Like a Dog" on a multi-track tape recorder. First, it records the drummer, Spencer, on Track One. Then it sets the tape deck to play Track One, while it records Kelly, the organist, on Track Two. Kelly can hear the playback of Spencer's drums while she is banging out her part. Then, the two recorded tracks play while Chloe plunks the bass line onto Track Three. Finally, Hugo steps up to the microphone and while listening to the other three tracks, howls his rambling poetry into Track Four. When Hugo makes a mistake, as he is prone to do, the recording engineer rewinds the tape and re-records only the flawed section. In this way, Hugo doesn't have to start from the beginning each time. Finally, with all four tracks recorded, the band mixes down the result to a second tape and the song is "in the can."

Like the multi-track recorder in the example above, B&P Pro contains Tracks which can be recorded independently and played together. Unlike a multi-track recorder however, B&P Pro places no limit on the number of Tracks used during one song. Also, B&P Pro's Tracks are far more sophisticated than a tape deck's tracks.

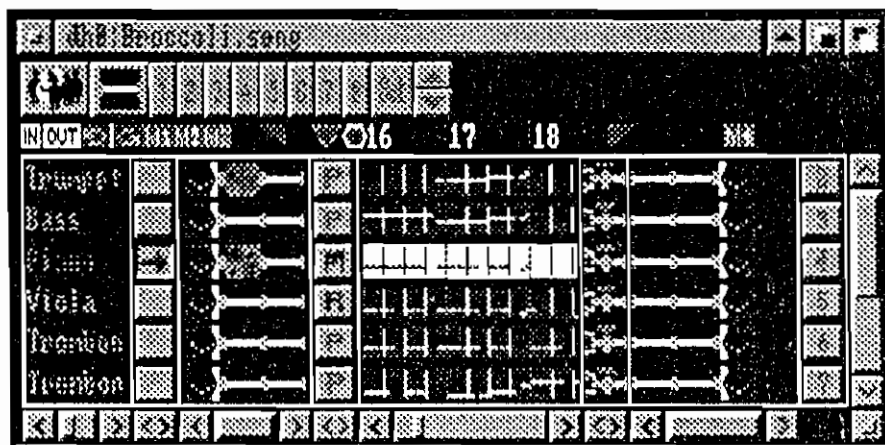
A Quick Tour of Bars&Pipes Professional

To better understand how to work with B&P Pro, let's discuss its components individually. We'll examine the Tracks window first, then follow with an explanation of the Transport Controls.

The Tracks Window

The Tracks window is the “nerve center” of B&P Pro. From here you can record, play back, and edit individual Tracks. The Tracks window consists of:

- * The Sequencer, located in the middle of the Tracks window, contains individual Tracks.



- * The PipeLines, found on either end of the Tracks window, process music as you record it or as you play it back. The PipeLine on the left is the Input PipeLine; the one on the right, the Output PipeLine. The PipeLines are already set up to pass music into and out of the Sequencer.

- * The Track Name, flush left in the Tracks Window, displays the name of each track. For each Track, you can enter your own names, store information about it, and activate Real-Time recording for it by double-clicking on the Track Name.

- * The Input Selector, just to the left of the Input PipeLine, determines which Track records music from your MIDI instruments.

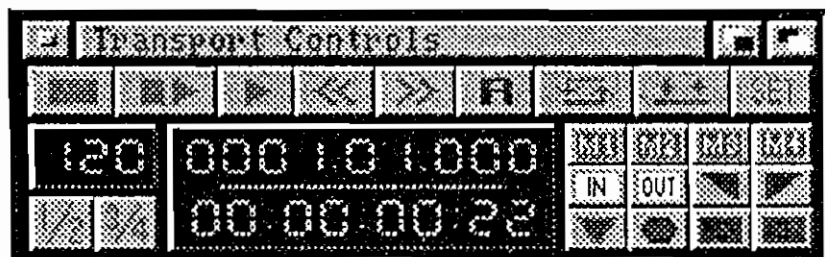
- * The Record/Play/Merge Select, between the Input PipeLine and Sequencer, provides a “fail-safe” method to keep you from accidentally recording over a Track. You’ll learn how to record a Track later in this chapter.

- * The Thru/Mute/Play Select, to the right of the Sequencer, determines whether the Track plays just what is already recorded (Play), plays its recorded music plus anything coming in the Input PipeLine (Thru), or stays silent (Mute).

- * The Output Selector, to the right of the Output PipeLine, determines which MIDI channel receives the playback from this Track.

The Transport Controls Window

The Transport Controls window controls Sequencer recording and playback. B&P Pro’s Transport Controls window features the Record, Play, Stop,



Pause, Rewind, Fast Forward, and other buttons; however, since B&P Pro deals with digital information in your computer's memory and not with two reels of tape, it does things a normal tape deck cannot do. For instance:

- * With B&P Pro, you can immediately move to any position in the song. By setting the Auto-locate Registers, you can mark up to four important points in your song and instantly return to these points whenever you wish.

- * B&P Pro can increase or decrease a song's speed without altering the pitch of the music. In fact, the tempo governs the speed of the performance in beats per minute, rather than inches per second. You can change the tempo even as the music plays.

- * B&P Pro can reference a song's position in musical terms, rather than in inches or arbitrary numbers. As the music plays, B&P Pro keeps track of time both in SMPTE time and in Measures, Beats, and Clocks. SMPTE is an acronym for the "Society of Motion Picture and Television Engineers," and is pronounced "Simp-Tee." SMPTE references time in hours, minutes, seconds, and frames. There are four types of SMPTE time, which will be discussed later in this manual. SMPTE time is useful when scoring for film and video, as well as for synching B&P Pro to a multi-track tape recorder.

Recording Two Tracks

Although B&P Pro is a sophisticated music environment, you'll find that you can accomplish wondrous things simply by recording a few Tracks. Let's walk through the steps of the recording process:

Step One: Activate the Input Selector

Click on the Input Selector for the Track you wish to record. The Input Selectors are in the Tracks window; if you have previously closed this window, open it by double-clicking on its icon or selecting Tracks from the Windows menu.

When you click on the Input Selector, a red arrow appears. By default, the input Tool is the MIDI In Tool. Thus, any notes you play on your MIDI keyboard enter this Track. If the PipeLine contains no input Tool, place one there by dragging it from the ToolBox. (See Chapter 6.)

Step Two: Set the Track's Record/Play/Merge Selector

Click on the Track's Record/Play/Merge Select button to place the Track in Record mode.

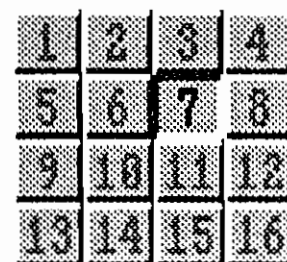
Step Three: Place the Track in Thru Mode

By default, B&P Pro places each Track in Thru Mode. To switch among Thru, Mute, and Play, click on the faucet to the right of the Sequencer display. When a Track is in Thru mode, depicted by a faucet with two connections on the left, you can hear both notes played on the keyboard and notes played by the Sequencer.



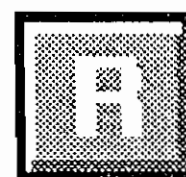
Step Four: Select the Output Channel

Depending on which MIDI instrument you use, set the Output Channel so that the synthesizer or device responds with the proper instrument. To select the Output Channel, click down with the mouse and drag it to the desired channel number in the pop-up menu. Remember, the MIDI Out Tool must be the last Tool in the PipeLine; otherwise, the notes won't be sent out the MIDI cable. Test your selection by playing a note on your MIDI keyboard. Notes enter the MIDI Tool on the left side of the PipeLine, pass through the Sequencer, and exit the MIDI Out Tool direct to the instrument indicated by the selected Output Channel. (Make sure that you're familiar with how to operate your MIDI synthesizer - in particular, setting the MIDI channels for receiving and turning off Local Control if your instrument allows this.)



Step Five: Put the Sequencer in Record

Click on the Record button in the Transport Controls window to activate the Sequencer Record mechanism. Alternatively, you can use the R on your Amiga keyboard to toggle in and out of Sequencer Record mode. If you have closed the Transport Controls window, open it by double-clicking on its icon or selecting Transport Controls from the Windows menu.



In Sequencer Record mode, all Tracks that have their Record Select buttons in record mode will record MIDI data, while all tracks set for play mode will play back the MIDI data and will not be recorded or erased. Understanding the distinction between Sequencer Record mode and Track Record mode is vital. Sequencer Record mode is entered when you activate the Record button from the Transport Controls window. When you thereafter start B&P Pro, with either the Start or Play buttons, B&P Pro is capable of recording MIDI data. This two-step operation is analogous to pressing the Record and Play buttons simultaneously on a hardware multi-track recorder. Track Record mode allows you to determine which tracks will actually record MIDI data. **ONLY TRACKS WITH THEIR R/P/M SELECTORS SET TO RECORD OR MERGE MODES WILL ACTUALLY RECORD WHEN B&P PRO IS PUT INTO SEQUENCER RECORD MODE.** This is analogous to selecting the Track Record buttons on a hardware multi-track recorder. This feature allows you to determine which tracks will actually record MIDI data and which tracks will only play back while you are overdubbing tracks.

Understanding the relationship between the Track Record mode and the Input Arrow is also important. The Input Arrow indicates which Track is currently selected for keyboard input. The Input Arrow must be set to the same Track on which you wish to record, and that Track must be placed in Track Record mode. If you first set the Input Arrow for a given Track, and then set that same Track to Track Record mode, changing the Input Arrow to another Track also changes the new Track to Track Record mode, and cancels Track Record mode in the previous Track. If, however, you first place a Track in Track Record mode before selecting the Input Arrow for that Track, then changing the Input Arrow to another Track will not set that new Track to Track Record mode and will not cancel Track Record mode in the previous track. It's a good idea to get into the habit of selecting your options in the Tracks Window from left to right, since B&P Pro was designed from the ground up to present you with all information logically as it would be encountered if you were viewing a signal flow chart.

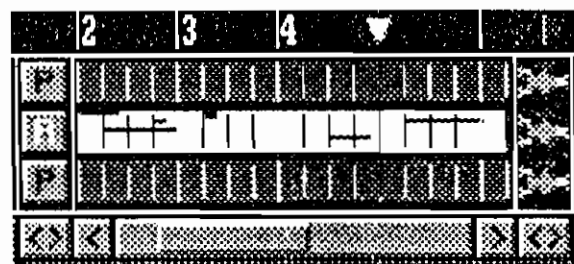
Step Six: Start Recording

Click on the Start button to begin recording. You can also use the Insert key on the numeric keypad on your Amiga keyboard. The B&P Pro Metro-
nome, if opted for, makes an audible click through the Amiga's speakers. Play along with the beat. When you are finished recording, click on the Stop button or press the Enter key on the numeric keypad on your Amiga keyboard. Notice that the Sequencer Record button turns off, but the Track Record button stays on.



Step Seven: View the Recording

When you stop recording, B&P Pro redraws the Sequencer display with the current measure in the center and the Position Marker Flag over it. B&P Pro displays notes as blue lines when the Track is selected, and as yellow lines when it's not. To view an earlier section, drag the scroll bar to the left, or to scroll one measure at a time, click on the left arrow. To view a later section, drag the scroll bar to the right, or, to scroll one measure at a time., click on the right arrow.



Step Eight: Play the Recording

Because the Sequencer Record button is now deactivated, you can safely play back your recording even though the Track is still in Record mode. Tracks in Record mode will not record or be erased if the sequencer is in Sequencer Play mode. To play from the beginning, click on the Start button or press the Insert key on the numeric keypad on your Amiga keyboard. To play from the current song position, click on the Play button or use the Enter key on the numeric keypad on your Amiga keyboard. You can also use the Start and Play buttons in a similar fashion when B&P Pro is in Sequencer Record mode in order to record from the

beginning of the composition or from the current song position, respectively.

If you are dissatisfied with what you hear, you can record a second time by clicking on Sequencer Record, then clicking on Start.

Step Nine: Record a Second Track

Once you are pleased with your first Track, take the Track out of Track Record mode by clicking twice on the Record/Play/Merge Select button. The button should now show the letter "P," for Play mode. Set the Input Selector to point to the second Track.

Next, set the second Track's Record/Play/Merge Selector to Record and choose the MIDI Output Channel. If your MIDI equipment can play different instruments on different channels, your first Track plays back, while your second Track records. Click on the Record button in the Transport Controls, then click on Start. Your first Track starts to play. Play along with it as the Sequencer records your performance on the second Track. When you are finished recording, click on the Stop button and take the second track out of Track Record mode. Next, click on the Start button to play both Tracks from the beginning.

You have now accomplished basic multi-track recording.

Now that we've introduced you to the basics of B&P Pro's operations, most of the remainder of the manual will describe each major section of the program in detail, followed by the Appendices, Index and Ordering Information.

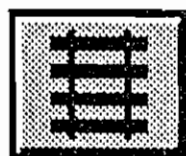
chapter four

tracks / transport

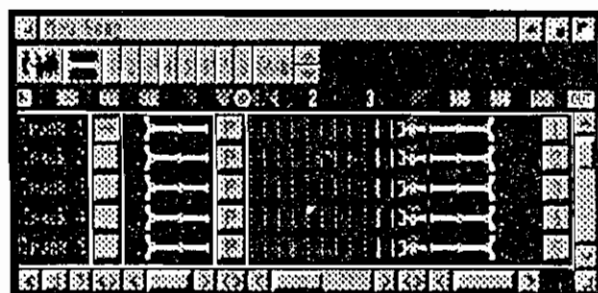
Central to B&P Pro are the Tracks and Transport Controls windows, which you use to record and play your compositions. As discussed in Chapter 3, we modeled B&P Pro on the concept of a multi-track tape recorder. The Tracks window contains, among other things, the Sequencer, which consists of individual Tracks. Tracks record and play different parts of your composition. The Transport Controls window contains familiar tape deck commands, such as Play, Record, Rewind, and Stop, to control recording and playback.

The Tracks Window

B&P Pro displays its Tracks in the Tracks window, which you can open by double-clicking on its icon. Use the scroll bar and arrows on the right side to scroll through the Tracks in order to view those which don't fit in the display.



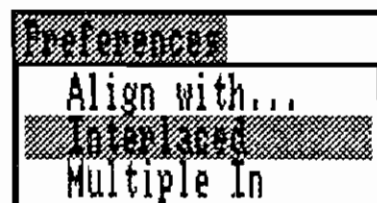
At the bottom of the Tracks window, you'll find a set of scroll bars, single arrows, and double arrows. Use the scroll bar and single arrows to search forward and backward. For example, to scroll the Track names from left to right, use the scroll bar and single arrows below the list of Track names.



Use the double arrows to resize sections of the display by dragging the arrows from left to right or right to left. With the double arrows, you can resize your display to show only what you want to view, within certain limits.



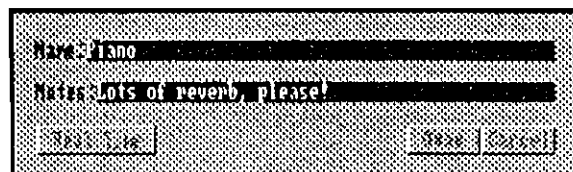
By running B&P Pro in interlaced mode, you can double the number of Tracks displayed. To do so, select Interlaced from the Preferences menu. This redraws the screen and doubles the vertical resolution, which provides plenty of room for additional Tracks. Be aware that unless you have optional display enhancer hardware installed in the computer, the screen will flicker when B&P Pro is run in interlaced mode.



Tracks Window Components

B&P Pro displays the Tracks in the following manner, starting from the left side of the Tracks window.

NAME: specifies the Track's label. To change a Track's name, double-click on the Track's name, which opens the Track Name requester. Enter the Track's name by first deleting "Track #," then entering the preferred name. In addition to the Track's name, you can enter notes about the Track.



REAL-TIME: found in the Track Name requester, the Real-Time button determines whether or not the Track is in real-time or song-time mode. By default, Tracks operate in song-time mode. In song-time mode, increasing the song's tempo causes notes to play faster. Each note plays on a particular measure, beat and clock, not at an absolute hour, minute and second.

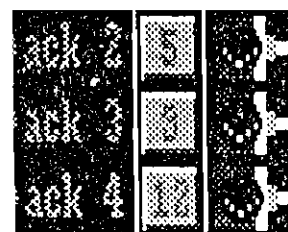
In some cases, however, certain events must happen at times independent of the song's tempo, such as sound effects in a film score. The sound effects must synchronize with their real-time screen counterparts. Such a situation calls for real-time mode. To lock a Track into real-time mode, click on the Real-Time button, and thereafter each note will play at an absolute hour, minute, and second, independent of the selected tempo.

Once you have set the Track name, notes about the Track, and the Real-Time option, click on Okay to keep the changes, or Cancel to disregard them.

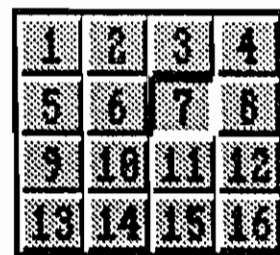
INPUT SELECTOR: chooses which Track receives incoming MIDI data. Only one Track at a time can receive from a source, unless you select Multiple In from the Preferences Menu. By default, B&P Pro sets up MIDI In as the source. Click on a Track's Input Selector to send all MIDI events to it. B&P Pro displays the selected input with a red arrow and the unselected inputs with grey boxes.



At times, you may need to record from multiple MIDI channels onto multiple Tracks. For instance, you might have a guitar controller that sends MIDI Events on different MIDI channels for each of its six strings. Normally, B&P Pro merges all MIDI channels into one and sends MIDI only to the Track with the Input Selector arrow. In this case however, you need to receive on more than one channel simultaneously. To do so, select Multiple In from the Preferences menu. When you choose this option, each Track displays a selectable MIDI Input Channel number, not an arrow or grey box. Each Track now receives MIDI Events on its specified MIDI Channel.



To change the Input Channel, click down with the mouse and a pop-up menu with all sixteen choices appears. Drag the mouse to the Channel of your choice and lift up to select it. If two Tracks share the same MIDI Input Channel, they both receive everything input on that Channel. In the above guitar controller example, six Tracks would be set to receive on each of the six MIDI Channels that the guitar sends. B&P Pro records each guitar string on a separate Track, instead of merging them into one Track.



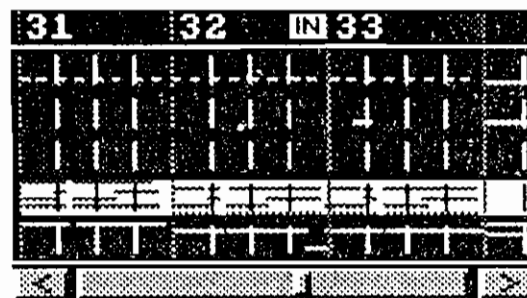
INPUT PIPELINE: directs music coming into a Track before it's recorded by the Sequencer. Tools placed in this PipeLine process the music as it flows in. For instance, a Transposition Tool placed in the Input PipeLine transposes all notes before they enter the Sequencer. Each Input PipeLine starts with a source Tool. Usually, the source Tool is the MIDI In Tool. It can be, however, another source of notes, such as the FeedBack Tool, which takes notes playing out one Track and feeds them into another. Fortunately, a knowledge of Tools isn't necessary to begin recording and playing your compositions. (See Chapter 6 for an explanation of using Tools in the PipeLine.)



RECORD/PLAY/MERGE SELECT: determines whether a Track records a new set of notes, merges notes input with the existing notes on the Track, or plays back notes previously recorded. Click on the Select button to toggle the Track between Record, Playback, and Merge modes. Even when a Track is in Record or Merge mode, it doesn't record until you activate the Sequencer Record button in the Transport Controls window. This feature provides double protection against accidental erasure of your Track and streamlines the process of multi-track recording (more on that later...).



SEQUENCER: stores your recorded performance and displays a section of that performance. The Sequencer provides you with a graphic representation of your music and automatically scrolls upon recording and playback. To manually scroll through the Sequencer, use the scroll bar and arrows at the bottom of the display. The Sequencer displays notes as yellow lines. Vertical lines mark Measure and Beat boundaries. To edit a Sequence, double click on it, or press Return, and the Sequence Editor opens for that Track. (See Chapters 11, 12, 13, and 14.)



THRU/MUTE/PLAY SELECTOR: switches the Track between Thru, Mute and Play modes. On the display, Thru mode resembles a blue faucet with two pipes entering it. This mode mixes the Sequence with whatever comes through the Input PipeLine. In this manner, you can hear what you play as well as what the Track plays. Mute Mode, a red faucet with no pipe entering, silences both the Input and the Output PipeLines. It provides an effective way to turn a Track off. Play mode,

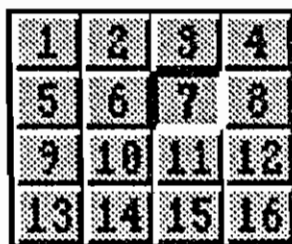


a yellow faucet with only one pipe entering it, plays only notes from the Sequencer and ignores whatever comes through the Input PipeLine.

OUTPUT PIPELINE: passes notes from the Sequencer through the Output PipeLine. As a result, Tools in this PipeLine process notes only on playback, which leaves the recorded Sequence unchanged. The last Tool must be a destination Tool; otherwise, the notes have no exit. By default, this is the MIDI Out Tool, which sends notes out through the MIDI connector.



OUTPUT SELECTOR: determines which MIDI channel receives outgoing data from the Output PipeLine. In order for you to attach several synthesizers to one MIDI cable, yet have them play different instruments, MIDI organizes instruments by channel numbers, which range from 1 to 16. Each Track sends notes and other MIDI events to one of the sixteen MIDI channels. Select the channel for each Track by using the Output Selector button. Click down on this button and a pop-up menu with all sixteen channels appears. Select the one you want with the mouse and lift up. You may select any channel for any Track, and have any number of Tracks set to the same channel.



Track Operations

SELECTING: In addition to setting the Track name, input, modes, and output, you can perform other operations on a Track by Track basis. Before using any of the Track operations, you first must select a Track by clicking once on your selected Track. Notice that the background of the selected Track turns white; if the Track contains any notes, they become blue. You can also use the Up and Down Arrow keys on your Amiga keyboard to select the Track above or below the currently selected Track.

MOVING: You can rearrange the list of Tracks as you like. To do so, use the two arrow buttons along the top edge of the Tracks window. The Track Up button, top, moves the Track up one in the list. The Track Down button, bottom, moves it down one. Double-clicking on the Track Up or Track Down button causes the selected Track to jump to the top or bottom of the display, respectively.



SOLOING: Clicking on the Solo button isolates the selected Track by muting all remaining Tracks. This feature is extremely useful when you want to hear only one Track at a time.



MUTING: When you click a second time on the Solo button, it mutes the selected Track. When a Track is muted, you will not hear its output. Click on this button a third time to return the Track to Normal mode.



The Time Signature Strip

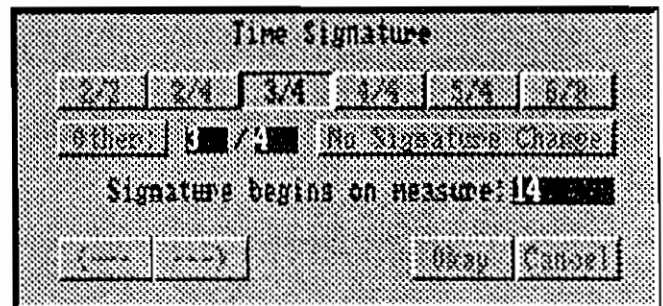
B&P Pro displays measure numbers and Time Signature changes in a strip above the Sequencer in the Track Display. Since the Sequencer shows only a section of your song, you can view other parts by scrolling forward or backward with the scroll bar

found directly beneath the Sequencer. B&P Pro displays each measure number unless a Time Signature change occurs. In this case, it displays the new Time Signature instead.



To insert, remove, or change a Time Signature, double click on the measure with which you wish to work. The Time Signature requester opens.

SELECTING: To select a Time Signature, click on your choice. B&P Pro provides six standard Time Signatures and a method to define custom Time Signatures. The six buttons across the top of this requester feature the pre-defined Time Signatures. Click on your preference to select it.



If you don't find one that meets your needs, create your own by first typing the values for the Time Signature after the Other: prompt. Then click on Other to select it. By default, B&P Pro displays the measure in which the Time Signature change occurs after the Signature begins on measure: prompt. Change the measure by editing this number.

ADDING: To add a Time Signature change, select the Time Signature and click on Okay to accept it.

REMOVING: To remove a Time Signature change, enter the Time Signature requester by double-clicking on the Time Signature you'd like to remove; click on the No Signature Change button; then select Okay.

CHANGING: To alter an existing Time Signature change, double-click on the Time Signature displayed above the Sequencer; then select a new Time Signature. You can alter when a Time Signature change occurs by editing the measure number after the Signature begins on measure: prompt. Once you change the Time Signature to your liking, click on Okay to accept the change, or Cancel, to disregard it.

To go to the previous Time Signature change, click on the left arrow button in the Time Signature requester. The arrow finds the Time Signature prior to the one you are viewing and displays it, so that you can edit it. The right arrow button scans forward to the next Time

Signature change.

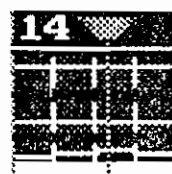
REMEMBER: If you create two adjacent, identical Time Signatures, B&P Pro removes the second one. To illustrate, if you have 6/8 on measure 5, then place 6/8 on measure 4, B&P Pro discards the 6/8 on measure 5.

The Flags

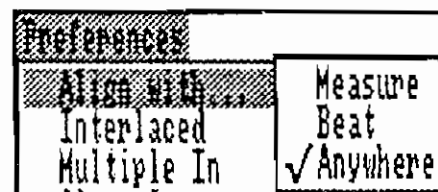


B&P Pro displays twelve Flag icons across the top of the Tracks. You can grab these with the mouse and drag them from left to right or right to left. Use the Flags to set positions in your music for editing, recording, looping, and more.

A Flag appearing during the displayed section has an attached vertical stem intersecting all of the Tracks. If you've placed the Flag in a measure which precedes the displayed section, it appears on the left side of the Sequencer. If you've placed it in a measure that follows the displayed section, it appears on the right. To relocate a Flag, first scroll the Sequencer so that the desired location shows in the Sequencer. Then drag the Flag to its position. To move a Flag to the beginning of the Song, drag it all the way to the left side of the screen. To move it to the end of the Song, drag it all the way to the right.



Often, you'll want to align Flags with measure boundaries. For instance, when you cut and paste a section, you usually do so on measure boundaries. The Align With... command in the Preferences menu gives you three alignment options: Measure, Beat, and Anywhere. If you select Measure, the Flag snaps to the beginning of the measure where you place it. If you select Beat, it snaps to the beginning of the beat where you place it. If you select Anywhere, it stays exactly where you place it. The selected Align With... option governs all twelve Flags.

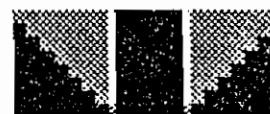


Briefly, the Flags are:

POSITION MARKER: The Position Marker Flag, the red triangle with the blue border, shows the current position in your song. If you press the Play button, your song starts at this point.



EDIT FLAGS: The two Edit Flags look like solid purple triangles, one pointing left and one pointing right. These Flags determine which part of your song is affected by Cut, Paste, and other editing



operations. (See Chapter 8 for more information.)

AUTO-LOCATE REGISTERS: The Auto-Locate Flags are blue rectangles marked M1 through M4. You can use these to mark important points in your composition, and immediately move to these points later by using the corresponding M1 through M4 buttons in the Transport Controls.



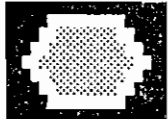
PUNCH IN/OUT: The yellow rectangles marked IN and OUT allow you to record over a restricted part of your song. Punch In/Out is described later in this chapter.



LOOP FLAGS: The Loop Flags appear as red rectangles containing curved lines with arrows. You use the Loop Flags to record one section of a Track up to eight times, then select one of the repetitions. Loop recording is described later in this chapter.



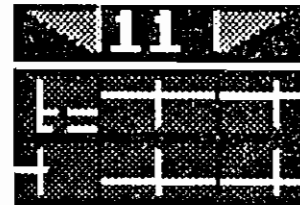
STOP SIGN: The Stop Sign is the red hexagon with the white border. If you move the Stop Sign into the Sequencer, then begin recording or playback before the Stop Sign, the Sequencer automatically stops when the song reaches this flag. This feature is useful when you want to sit back and listen to part of a song while you're away from the keyboard, or if you're performing live or recording a sequence to tape and want the song to stop upon completion.



Cutting and Pasting

The Tracks window supports editing functions, allowing you to cut, copy, delete, and paste portions of one (or all) Tracks in the Sequencer. B&P Pro refers to these parts as Clips.

To create a Clip, simply move the Edit flags to the beginning and end of the section of music you want, then select Copy, Cut or Delete from the Edit menu. Copy places a copy of the selected music in the Clip Buffer; Cut removes the selection and places a copy of it in the Clip Buffer. Delete removes the selection without placing a copy of it in the Clip Buffer. Both sides which remain after the cut or delete will fuse together.



You can Copy, Cut, or Delete one or all Tracks. To take one Track, simply select the Track you want to include and click on the Solo button to mute all other Tracks. To take all Tracks, make sure the Solo button is in normal mode.

To Paste a Clip, position the left Edit Flag at the point where you want the pasted section to begin; then select Paste from the Edit menu.

You can manage Clips in one of two ways:

tracks / transport - chapter 4

* The Clip Buffer, an internal buffer in B&P Pro, holds a single Clip. Cut or Copy replaces the previous contents of the Clip Buffer with your selection, and Paste copies the Clip Buffer contents into your Tracks, but does not empty the Clip Buffer.

* The ClipBoard holds as many Clips as your Amiga's memory allows. Cut and Copy adds the Clip to the ClipBoard, and Paste copies the selected Clip from the ClipBoard into your Tracks. To use the ClipBoard, select Use ClipBoard from the Preferences menu. The ClipBoard is a separate window, and has its own icon.

There are many other editing operations available, and many powerful ClipBoard features. (For more information about editing, see Chapter 8.)

The Track Menu

The Track menu is the second menu from the left. Unlike most of the menus in the main menu set, the Track menu is accessed only from the Tracks window. With the exception of New and Load, all of the commands in the Track menu operate on the currently selected Track. Select a Track by clicking on it once. The Track Menu commands are:



NEW: (AN) creates a new, empty Track.

COPY: duplicates the selected Track.

MERGE: (AM) mixes the contents of one Track into another Track. To use the Merge command, select the first Track, then pick the Merge command. Click on the second Track to merge the Tracks, or click on the background of the screen to abort the Merge operation. B&P Pro merges the first Track with the second Track.

DELETE: (AD) removes the selected Track.

LOAD TRACK: loads a Track from disk. When you select this command, the B&P Pro file requester opens. Use it to select a Track for loading. Of course, in order to use the Load Track command, you must have previously saved a Track.

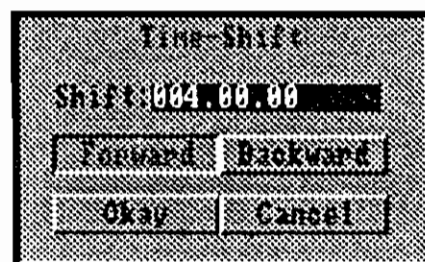
LOAD GROUP: this selection is disabled until you select a Group. (See Chapter 5 for more information.)

SAVE: saves a single Track to disk. The B&P Pro File requester opens. Use it to select or create a file in which to save your Track.

ERASE: erases the Track, emptying it of its contents, but not deleting the Track itself.

TOOLIZE: processes all notes in the currently selected Track with the currently selected Tool in the ToolPad. (For more on the ToolPad, see Chapter 6.)

TIME-SHIFT: moves everything in the selected Track forward or backward in time. When you select this command, B&P Pro opens the Time Shift requester.



Enter the shift distance in measures, beats and clocks after the Shift: prompt. For instance, to shift everything a beat later, enter "0.01.0," i.e., no measures, 1 beat, and no clocks.

When you click on the Forward button, the music shifts forward (later) in time. The Backward button shifts the music back (earlier) in time. Click on Okay to confirm the shift or Cancel to leave the Track unchanged.

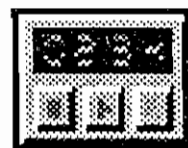
PROPAGATE: in conjunction with the A-B-A feature of the Song Construction window, copies changes made to the first instance of each section to all other instances of those sections for the selected Track only.

SHARE INPUT: and **GATHER GROUP:** both of these selections are disabled until you select a Group. (See Chapter 5 for more information.)

PRINT: opens the print requester to print the Track. (See Chapter 19.)

The Transport Controls Window

B&P Pro keeps all the transport controls in a separate window. You can reposition this window as is convenient, or shrink it down to an icon. If you close the Transport Controls window, you can reopen it by double-clicking on the icon or by selecting Transport Controls from the Windows menu.



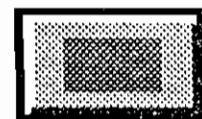
The Transport Controls window contains four groups of controls: the Transport buttons, the Tempo controls, the Song Position controls, and the Flag position controls.



Transport Buttons

Across the top of the window are nine buttons, which control recording and playback. They are similar in function to the controls on a tape recorder. Briefly, the Transport buttons are:

STOP: halts recording and playback. Click to activate.



START: begins recording and playback from the beginning of the song. The Insert key (0/Ins on the numeric keypad) performs this function as well. If the song is already playing, pressing Start immediately stops the performance and starts it from the beginning.



PLAY: begins recording and playback from the Position Marker. Use this control when you want to start from a specific point in the song. Pressing the Play button a second time stops the performance. The Enter key on the numeric keypad doubles as the Play/Stop button.



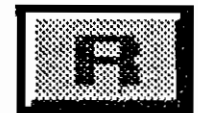
REWIND: quickly shuttles the song backward to access a specific point in the song. If the song is playing when you press the Rewind button, it stops, then resumes when you lift up on the new location.



FAST FORWARD: shuttles the song forward in time. If the song is playing when you press the Fast Forward button, it stops, then resumes when you lift up on the new location.



RECORD: enables Sequencer recording. To activate, click on it. As an option, the "R" key on your Amiga keyboard activates Sequencer recording as well. When you start the Sequencer, all non-muted Tracks play back, even when in Track Record mode.



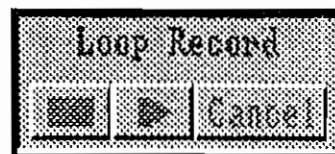
To record on a Track(s), you must place the desired Track(s) in Track Record or Merge mode (on the Tracks window), then activate the Sequencer Record button. Remember that if Multiple In is not selected from the Preferences Menu, then only the Track with its Input Arrow selected will receive MIDI data from its input. The input from the selected Track, however, can be routed to other Tracks by means of Branch and Merge Tools. If you want a Track with a Merge Tool on its Input PipeLine to record MIDI data, be certain that it is in Track Record mode. To switch from playback to record at any point in a song, activate recording either by activating the Sequencer Record button and starting the sequence with the Start or Play button, or by starting the playback first and then activating the Sequencer Record button.

Clicking the Record button a second time deactivates recording, while the sequencer continues to play. Bringing the Sequencer in and out of Sequencer Record mode is called punching in and out. The previous example demonstrates Manual Punch In/Out. B&P Pro also provides for Automatic Punch In/Out, which will be discussed later in this manual. In either case, when the Sequencer stops playing, the Sequencer Record button automatically turns off.

LOOP: activates the Loop Mode recording function. With Loop Mode, you can record one section of your Track over and over. Use the Loop Mode button in conjunction with the Loop Flags. Position the Loop Flags on the boundaries of the section you'd like to loop. Then click on the Loop button,



which opens the Looped Mode requester. B&P Pro automatically places the Position Marker Flag at the start of the looped section and activates the Sequencer Record button.



REMEMBER: You must set the Track to be recorded to Track Record mode.

To begin recording, click on the Play button in the Looped Mode requester. The Sequencer begins recording. The section marked by the Loop Flags plays eight times, which gives you eight opportunities to record in the looped section. When the eighth loop finishes playing, or when you've clicked on the Stop button in the Looped Mode Requester, another requester opens which allows you to choose which of the eight repetitions to keep. If you change your mind, select Cancel to abort the Loop Recording process.

These repetitions are represented by buttons numbered one through eight. Click on each number to hear its particular version. You may repeatedly hear any of the versions. When you settle on a choice, click Okay to accept it. Only the selected version will be retained, while the other seven versions will be discarded. If you are unhappy with all eight versions, select Cancel to discard all of them.

PUNCH IN/OUT: automatically switches the Sequencer in and out of Sequencer Record mode at preset locations. Although you can manually activate and deactivate the Record button while your song plays, if you're also playing an instrument, you'll need a third hand, which the Punch In and Out Flags provide. Punch In/Out is generally used to replace a previously recorded section of your song with a new part, without your having to record the entire song again.



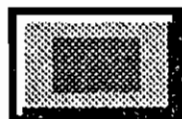
To use Punch In/Out, move the In and Out flags to the boundaries of the section you'd like to record; then click on the Punch In/Out button. When you start the Sequencer, it will begin playing four measures before the Punch In point, which lets you find your place in the music before the Punch In starts. This is called the pre-roll. Double-clicking on the Punch In/Out button both moves the Position Marker Flag back four measures and starts the Sequencer. Do not activate Sequence Record mode.

If you'd rather start elsewhere, use the Rewind, Fast Forward, or Auto-Locate buttons to relocate the Position Marker before the Punch In point. Once the Punch In/Out button is activated, click on the Play button. At the Punch In point, the Sequencer Record light automatically turns on and all Tracks in Track Record mode switch from playback to recording. At the Punch Out point, the Tracks in Track Record mode revert to playback. In this manner, you can play along with your composition before the Punch In point during the pre-roll. Then continue playing while the sequencer replaces the previously recorded MIDI data between the Punch In and Punch Out points with what you are now playing. To Punch In only, drag the Punch Out flag to the far right, which places it at the end of the song. To Punch Out only, drag the Punch In Flag all the way to the left, which places it at the song's beginning.

SET: This button works with the Flag Position controls, described below.

Panic Buttons

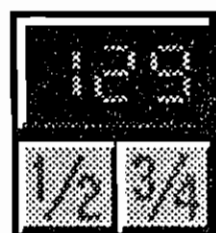
STUCK NOTES: If notes are stuck, click on the Stop button in the Transport Controls window. This sends the MIDI All Notes Off command through all Tracks to each Track output. As a result, most MIDI instruments turn off their voices.



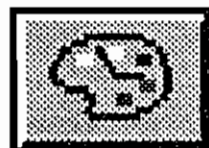
CLOGGED PIPELINE: It is possible to create a "logjam" in the PipeLines. For example, if MIDI enters and exits the same PipeLine, and the MIDI synthesizer returns the notes it receives to B&P Pro, a feedback loop results. At this point, none of the Transport Controls are operable. If this "logjam" should occur, press the Escape key on your Amiga keyboard. You may need to press Escape several times to evacuate completely the PipeLine.

Tempo Controls

The Tempo Display shows the tempo of the song in Beats Per Minute. Set the tempo, or speed, by clicking in the top or bottom half of the numbers in the Tempo Display to increase or decrease the tempo. If, temporarily, you need to slow down the song (for example, when recording a difficult passage), click on the 1/2 or 3/4 buttons to slow the tempo to one-half or three-quarters of the original speed. Clicking on the same button a second time restores the tempo to its original speed.



If you want to quickly change the Tempo to something other than one-half or three-quarter speed, you can use the Tempo Palette window. To open the Tempo Palette window, select "Tempo Palette" from the Windows menu or double-click on its icon.



The Tempo Palette lists four pre-set Tempos: A, B, C, and D. To set the Tempo, click on the preset letter, e.g., "A," and the Tempo assumes that value. To change a preset tempo, click on the number and enter the desired tempo.



If you like, you can leave the Tempo Palette window open while you work on your composition. You may find it useful to place the Tempo Palette window directly above the Tempo controls (obscuring the transport control buttons), and use the "window-to-back" buttons on the Transport Controls and Tempo Palette windows to expose or hide the Tempo Palette as needed.

Song Position Controls

Just as a tape deck marks time with a counter that measures the tape's length, B&P Pro

keeps Track with the Song Position Display.

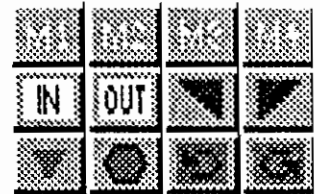
The top Song Position Display keeps track of your song in relative time of Measures, Beats, and Clocks. The bottom display shows song position in SMPTE real-time format of hours, minutes, seconds, and frames. To reposition your song to an exact time, click on the top or bottom half of the numbers in the desired display to increase or decrease their values. Note that the second display adjusts itself to the new position as well.



B&P Pro also provides the Position Marker Flag, a red triangle with a blue border, which shows the location of the Song Position in the Sequencer. When you click the numbers in the Song Position Display as described above, the Position Marker moves to the new position as well. You can also adjust the song position by using the mouse to drag this Flag to a new location.

Flag Position Controls

In a long composition, you could spend a great deal of time trying to find where you left a particular flag. Or, you could simply click on the Flag Position Control button that matches the flag you're looking for. There are twelve Flag Position Control buttons, corresponding to the twelve Flags B&P Pro supports. Click once to move to the Flag location; click twice to start playing from that flag. This is the sole function of the Auto-Locate Flags.

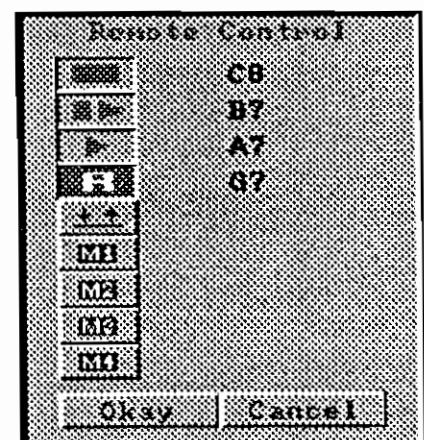


If you want to set a Flag to a particular point in your music, you can use the SET button directly above the Flag Position Controls. To set a Flag, click on the SET button. While the SET button is highlighted, adjust the Song Position Display as described above, then click on the button corresponding to the Flag you want to move.

Remote Control

With the Remote Control option, you can use your MIDI keyboard to control the Sequencer. Remote controls let you Start, Stop, Record, Play, Punch In, Punch Out, and move to the Auto-Locate Flags (M1 through M4) in your composition.

To set up the Remote Controls, select Remote Control from the Preferences menu. In response, B&P Pro opens the Remote Control requester. Click on the Control you want to set up, then press the desired key on your MIDI keyboard. This will assign the desired key to the selected control. Use the

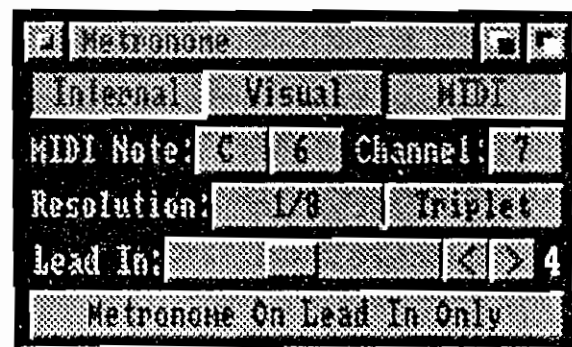


keys located at the very top or bottom of your MIDI keyboard to prevent pressing one accidentally while recording.

Clicking on each control in the requester toggles it on and off. Only the highlighted controls are active. Each active control behaves identically to the button it represents in the Transport Control window when you press the corresponding key on the MIDI keyboard.

The Metronome Window

To open the Metronome window, select Metronome from the Windows menu or double-click on its icon. The Metronome window provides three metronome options; you can activate any combination of the three. To turn the metronome off, disable all three options.



Selecting the Beat Source

INTERNAL: sends a click to the Amiga's speakers for each beat.

VISUAL: flashes the Amiga's screen on every beat.

MIDI: sends a MIDI note to an instrument on the MIDI cable. The Metronome window contains several buttons that control the pitch and channel of the MIDI note.

MIDI NOTE: To select the pitch of the MIDI note, click on the note letter after the Note: prompt and hold down the mouse. Under the mouse, a pop-up menu appears, which displays a one-octave piano keyboard. Select the desired note from that keyboard by dragging the mouse to it, then lifting up.

OCTAVE: To select the octave, click on the octave number to the right of the note and select the octave from a pop-up menu of octave choices.

CHANNEL: To select the MIDI Channel number, click on the Channel button to the right of the MIDI Note buttons. This button also opens a pop-up menu, which displays channels 1 through 16, from which you must select.

Each time you make a selection, B&P Pro sends it down the MIDI cable to test it.

Selecting the Beat Resolution

Usually, a metronome sounds at each beat. You can change the rate, however, by altering the note length with the Resolution button. Like the MIDI Note and Channel buttons,

press and hold the Resolution button to open a pop-up menu displaying notes from whole (1/1) to sixty-fourth (1/64).

If you select a 1/4 resolution in 4/4 time, B&P Pro will click on every beat. If you select 1/2 resolution, B&P Pro will click on every other beat starting with the first beat in the measure. If you choose 1/8, B&P Pro will click eight times a measure, or twice per beat.

If you are composing a section of music involving many triplets, activate the Triplet button to the right of the Resolution button. This creates a triplet feel by generating three clicks in place of two.

The Lead In Option

Often it helps to have a countdown before you start recording. To set up a countdown, open the Metronome window and set the Lead In slider. The slider lets you set the number of measures to count down before recording actually starts. To disable Lead In, set the number of measures to Lead In to zero. Drag the slider or click on the arrow to set the # of measures.

You may find that you do not want to use the Metronome, except for the Lead In time. In this case, select the Metronome On Lead In Only button. You can also disable all three metronome options; this provides a silent Lead In.

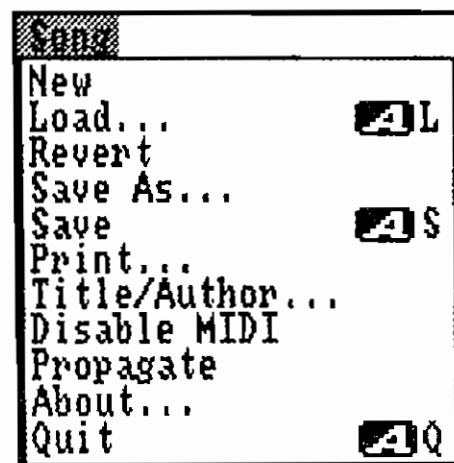
The Song Menu

The Song menu is the first menu in the main menu set. Use it to create, load, and save entire compositions and to exit B&P Pro. Unlike the Track menu, you can access the Song menu from multiple windows, including the Transport Controls and Song Constructions windows. The Song Menu selections are:

NEW: clears away the current composition and creates a blank song with sixteen Tracks. B&P Pro connects each Track to the MIDI In and Out Tools. This environment is identical to that which exists when you first run B&P Pro.

LOAD: (AL) clears the current song and replaces it with music previously saved to disk. When you select Load, the standard B&P Pro file requester opens. Use it to select the song, then click on Load to load it, or Cancel, to abort the operation.

REVERT: returns the Sequencer to its condition at the most recent save, by loading the last song saved to disk. Think of Revert as a powerful Undo command. At regular intervals during the composition process, save your song with the Save command. Then, if you make a mistake, you can use the Revert command to return to



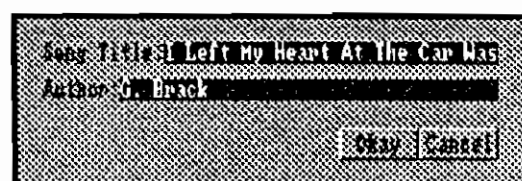
an earlier version of your music.

SAVE AS: saves your song for the first time or under a different file name. This command opens the B&P Pro file requester, which enables you to create a new file or to select an old one to overwrite. Once you save a song with the Save As command, B&P Pro recognizes the file name. From then on, you can use the Save command instead.

SAVE: (AS) stores your song to disk under its current file name. This command works only if a file has been previously saved or loaded from disk. Once you load a song or save it with the Save As command, you can use the Save command without bothering with the File Requester.

PRINT: prints your song. When you select Print, B&P Pro opens the Print requester (described in chapter 19) that allows you to print the entire score.

TITLE/AUTHOR: opens a requester into which you can enter the song title and author.



DISABLE/ENABLE MIDI: Disable MIDI disconnects the MIDI In Tool from the Amiga's internal serial port so that another program can access the port. Select Enable MIDI to reconnect the MIDI In Tool.

PROPAGATE: in conjunction with the A-B-A feature of the Song Construction window, copies changes made to the first instance of each section to all other instances of those sections.

ABOUT: to indulge the egos of B&P Pro's authors, we added this command. It won't do a thing to your music, but Melissa and Todor, the program's authors, sure love it.

QUIT: (AQ) exits B&P Pro entirely and returns you to the WorkBench. A requester asks you whether you'd like to save your file before exiting.

Using a Preset Environment

If you find that you prefer a particular configuration of Tools, Tracks, Tempos, etc., set up your preferences and save them as a song, rather than assembling them each time you begin a new song. Then, each time you start a new project, load in this blank song and start from there.

chapter five groups

The Tracks that comprise your song can be organized into Groups. A Group is a collection of Tracks that can be accessed as a unit. When a Track belongs to a Group, it's called a member Track. With Groups, you can Mute or Solo several Tracks on playback, which helps you isolate parts of your song. You can create as many as eight Groups.

Organizing Groups

The Group buttons are along the top of the Tracks window.



CREATING: To create a Group, click on the desired Group Number button (1 through 8) then click on the Group button to the right of button 8. The buttons you clicked now looked "recessed" to remind you that you're creating a new Group.

Now, click on the tracks you want to be part of the Group. If you change your mind about a selected track, click on that track to deselect it. Each track can belong to several Groups.

When you've finished selecting tracks, click the Group button again. The Group Number button, and the tracks in the Group, remain selected.

CHOOSING: To work with a Group, click on the desired Group Number button (1 through 8). B&P Pro highlights all the tracks within the selected Group. To deselect a Group, click on any Group Number button to choose another Group or the currently selected button to deselect all Groups.



EDITING: If you want to add or remove tracks in a Group, click on the desired Group Number button to select the Group, then click the Group button. Select the tracks you want to add to and remove from the Group, then click on the Group button again. Tracks removed from a Group remain in the Sequencer, available for use.

SOLOING: Once you select a Group, you can use quite a few commands on the Group as a whole. To solo the Group, click on the Solo Button. When a Group is in solo mode, one of the singers in the Solo button is highlighted in red. Notice that all Tracks are muted, except the ones in your Group.



MUTING: To mute the Group, click again on the Solo button, so that it shows a circle with a slash. Now, all the Tracks in the Group are muted and all other Tracks are "unmuted."



EDITING: All of the commands in the Edit Menu (except for Undo) can be used on a single Group by first selecting the Group, then Soloing it.

The Group Menu

When you select a Group, the Track Menu becomes the "Group Menu." Some commands are different. Other commands, which are disabled for Tracks, become available. Let's take a tour of this menu:

NEW (AN): creates a new Track and places it in the Group.

COPY: is disabled. A Group cannot be copied.

MERGE...: (AM): is disabled. A Group cannot be merged into another.

DELETE (AD): removes the Group as a whole.

LOAD TRACK...: loads a Track from disk and places it into the Group.

LOAD GROUP...: loads a Group from disk and adds it to the currently selected Group.

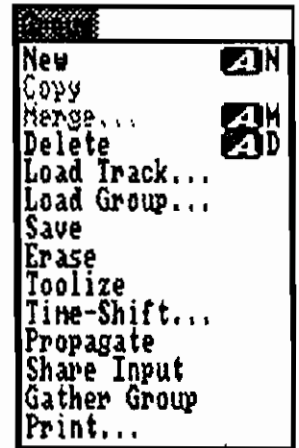
SAVE: saves a Group to disk. Note that the actual Group number is not saved, just the member Tracks that compose the Group. This means you can reload the Group into a different Group number with the Load Group command.

ERASE: deletes all notes in the Group. Unlike the Erase command in the Edit Menu, this command erases everything, not just the region between the Edit Flags.

TOOLIZE: takes the currently selected Tool in the ToolPad and applies it to every note in each member of the Group.

TIME-SHIFT...: offsets the timing of the Group by a specified amount. Shifting the timing backward makes the notes play sooner, shifting it forward makes them play later. Time-shift is useful if you need to make small adjustments in the timing of the performance.

PROPAGATE: in conjunction with the Song Construction window's A-B-A feature, copies changes to the first instance of each section to all other instances of those sections for the entire Group.



SHARE INPUT: connects the PipeLines of all tracks in the Group so that any input to the top Track goes to the other Tracks as well.

GATHER GROUP: reorganizes the display so that all the Tracks in the selected Group are adjacent to each other.

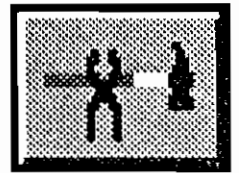
PRINT...: prints the Tracks of the selected Group. (See Chapter 19.)

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chapter six using tools

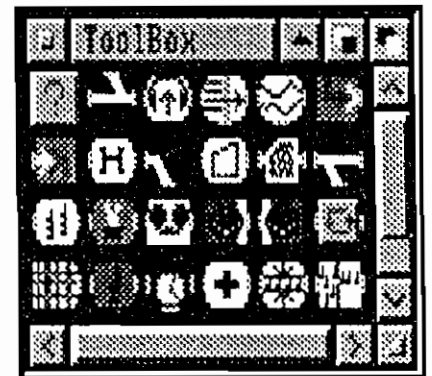
Tools process MIDI data. They're responsible for a great deal of B&P Pro's musical magic. (For a description of each, see Appendix A.) All of the Tools in B&P Pro reside in the ToolBox. From the ToolBox, you can choose Tools to place in your PipeLine and ToolPad, load and save Tools from and to disk, and even create and edit your own MacroTools.

To open the ToolBox, double-click on the ToolBox icon along the right side of the screen, or select ToolBox from the Windows menu. You can resize the ToolBox window to display as few or as many Tools as you desire. To view unseen Tools, use the scroll bars on the ToolBox window.



You can drag Tools from the ToolBox and place them in the PipeLines, as well as in the ToolPad. We'll first discuss how Tools are used in the PipeLine, then in the ToolPad. (To learn how to use Tools in the Sequence Editor, see Chapter 11.)

Note that the first Tool in the ToolBox window, the grey box with the "?" (question mark), is not really a Tool at all. If you press and hold the mouse button over this "tool," a pop-up menu opens containing the names of all the Tools in the ToolBox. To select a tool with the pop-up menu, drag the mouse pointer until the desired tool name highlights; then release the mouse button. A copy of the Tool icon "sticks" to the mouse. You can then click on a PipeLine or ToolPad to place the Tool or click anywhere else to eliminate the copy. This feature is handy for late-night or early-morning sessions when you're having problems seeing the Tool icons and remembering what they mean.



Tools in the PipeLine

The Tracks window contains rows and rows of pipes. As you may already know, these are the PipeLines. They act as special pathways through which all of your musical input flows. Before you learn about Tools per se, let's take a closer look at the PipeLine.

The Input and Output Sides

As you can see from looking at the Tracks window, each PipeLine has two sides. On the left side, the PipeLine starts with the note source, usually MIDI In, and runs into the Sequencer.



On the right side, the PipeLine leaves the Sequencer and connects with the output, usually MIDI Out. Notes, and other MIDI events, such as Pitch Bend and Control Change, flow through the PipeLine. They follow a path that leads from the source, through Tools on the left side of the PipeLine, into the Sequencer, through the Tools on the right side, and finally out the right side of the PipeLine. Sound complicated? Well, fortunately, B&P Pro's bark is a lot worse than its bite.

First, let's discuss what happens on the left side, the Input. When you place a Tool there, it processes all the notes that flow through it as you input them, then passes them to the Sequencer for recording. In other words, as soon as you press a key on your instrument keyboard, or other input device, the Tools in the Input PipeLine process each note you generate. Then the notes enter the Sequencer. Notes that enter the Sequencer are stored in RAM (Random Access Memory), and will be lost when you turn off the Amiga, unless you save your composition to disk first.

For example, if you place the Modulation Tool on the left side of a Track's PipeLine, it shifts all notes that pass through it up or down in pitch by a specified amount. The notes enter the Sequencer already Modulated and are recorded into the Sequence that way. No limit exists as to the number of Tools that can be placed in the PipeLine to do musically useful, wonderful, and strange things to the notes before they are recorded. You could follow the Modulation Tool with an Echo Tool. In this case, the notes would be recorded both Modulated and Echoed.

The right side of the PipeLine, the Output side, handles the notes as they come out of the Sequencer. Tools placed in the Output PipeLine alter the music as it is played back. Because they process notes after they are recorded, these Tools cannot alter the Sequence itself, only the way that sequence is played back. In our example above, if the Modulation Tool is placed on the Output side, it shifts the pitch of the notes as they are played back, but the recorded notes in the Sequence remain untouched. This provides incredible flexibility: you can swap Tools around until you find the desired effect without altering any recorded data.

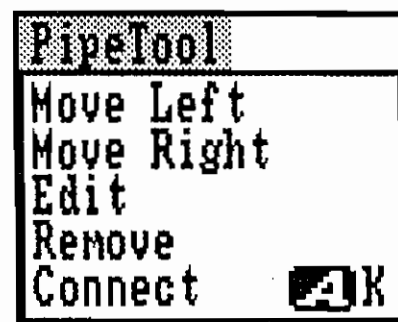
Bringing Tools into Play

PLACING: To put a Tool in a PipeLine, click on the desired Tool in the ToolBox, hold the mouse button down, and drag the tool to its intended destination. When you lift up on the mouse button, B&P Pro creates a copy of the Tool and places the Tool there.

Once you place a Tool in a PipeLine, that Tool processes all note events flowing through it. More importantly, it becomes a separate entity and is no longer a part of the original Tool in your ToolBox. This versatile feature allows several versions of the same Tool to behave differently. For example, you might place an Echo tool on several different PipeLines and set each of them to Echo a different number of times.

Some Tools, most notably the MIDI In and MIDI Out Tools, exist only as inputs or outputs of a PipeLine. Inputs are always at the very beginning of a PipeLine and outputs are always at the very end of a PipeLine. B&P Pro does not let you put them anywhere else, and it does not let you place two inputs or two outputs on one PipeLine. If you place a MIDI In Tool anywhere on a PipeLine, it always moves to the input, the first position on the left side. If, however, an input Tool is there already, the MIDI In Tool is not inserted into the PipeLine at all.

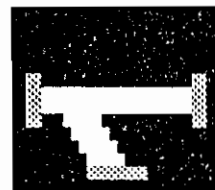
MOVING: Once you have placed a Tool in a PipeLine, you may wish to change the Tool's position. For example, you placed a Keyboard Split Tool before a Quantize Tool, but want to reverse their order. To move a Tool, select the Tool you want to move by clicking on it, then press the Left or Right Arrow key on your Amiga keyboard to move it. In addition to using the keys, you can move a Tool with the Move Left and Move Right commands in the PipeTool Menu.



DUPLICATING: To create a copy of a Tool already in a PipeLine, simply click down on the Tool and drag it to a new location. B&P Pro leaves the original Tool in its place, creating an exact copy, including parameter settings.

REMOVING: To remove a Tool from a PipeLine, select it by clicking on it, then press the Delete key on your Amiga keyboard. You can also remove the Tool by selecting the Remove command in the PipeTool Menu.

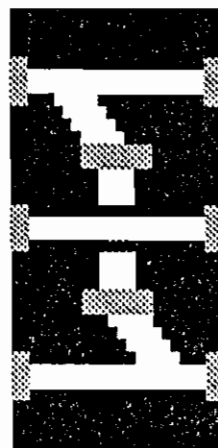
CONNECTING: Some Tools can pass events from one PipeLine to another. The simplest, the Branch Tool, passes notes through its PipeLine, as well as sending them to another Tool on another Track's PipeLine. Other branching Tools send only certain notes down the first PipeLine, while routing other notes to the second PipeLine. For example, the Keyboard Splitter Tool sends all notes at or above the split point down its PipeLine and sends all notes below the split point to another Track's PipeLine. The ability to connect PipeLines in this vertical manner is powerful. You'll find that it adds a great degree of versatility to the composition process.



Tools that can be connected by vertical pipes with Tools on other PipeLines have two outputs: the normal output on the right side that sends notes or other Midi data to the next Tool in the PipeLine, and the branching output, located on the top or bottom, that sends notes or other Midi data to a Tool above or below it. The simplest branching Tool is the Branch

Tool. It's just a T-shaped pipe with one input and two outputs that directs the flow of Midi data, but does not process that data.

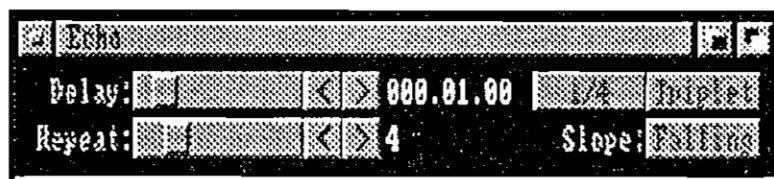
Although many different Tools can branch, the only Tool that can receive is the Merge Tool. It's a Y-shaped pipe, with two inputs and one output.



To connect two PipeLines, you first place a branching Tool (see Appendix A) on one PipeLine and place the target Tool, the Merge Tool, on the other. Once these Tools are in place, select the branching Tool by clicking on it. Then, choose the Connect command (AK) from the PipeTool Menu and click on the target Tool, the Merge Tool. B&P Pro draws a vertical pipe between the two, connecting them. Often, when you set the two Tools up, they are not directly in line with each other. Don't worry. Once you have connected the tools, B&P Pro adjusts the pipes to draw a vertical pipe between them.

Also, Tools that have a second output have icons in the ToolBox showing the sending pipe going down, while the Merge Tool shows a pipe coming in from the top. This does not mean that you can send only from a pipe higher in the display to a lower one. If a lower pipe sends to a higher one, B&P Pro uses alternate icons that display the flipped connections. No branching, however, is allowed between the Input and Output sides of the PipeLine.

EDITING: To edit a Tool, double click on its icon in the PipeLine, or select the Tool. Then select Edit from the PipeTool menu. If the Tool has parameters, B&P Pro opens its Control window, which



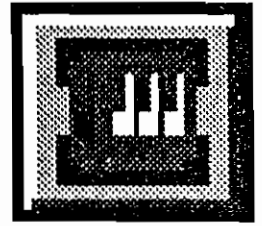
displays those parameters. You are free to change them, **EVEN IN REAL TIME**. This makes it easy to observe the changes as you make them. For example, if you want to edit the Echo Tool, double click on it and the Echo Tool's Control window opens. You can select different echo counts and durations, even as the tool echoes the notes. Once you are satisfied with the changes, you may close the window.

The only time you have to close a Tool Control window is when you do something that removes the Tool, such as closing down or deleting a Track. If you delete a tool whose Control window is open, B&P Pro closes the window before removing the Tool. You may find it useful to leave a Control window open for quick access to its Controls.

Since most Tools have a unique set of parameters that can be edited, we leave the description of their Control windows to Appendix A.

Tools in the ToolPad

Tools placed in the ToolPad do not process notes as they are played, as do Tools in a PipeLine. Instead, they process all of the notes in a song, Track, or section thereof. For example, if you place the Quantize Tool in the ToolPad, you can use it to Quantize all of the notes in a selected Track. The ToolPad can hold up to sixteen Tools at once.

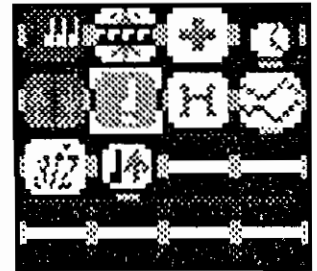


In addition to the ToolPad in the Tracks window, there are ToolPads in the Sequence Editor, Song Construction, and List Editor windows. Use these to process individual notes or groups of notes as you edit. (See Chapters 9, 11, and 14.) These other ToolPads are actually the same as the ToolPad in the Tracks window. They hold the same set of Tools. Thus, any Tools that you place in one ToolPad appear in all the others.

PLACING: To place a Tool in the ToolPad, just drag it from the ToolBox or PipeLine and drop it on the ToolPad. If the ToolPad is not full, which is almost always the case, the new Tool takes the next empty slot. If, however, the ToolPad is full, the new Tool replaces the currently displayed Tool in the ToolPad.

You can put more than one of the same type of Tool in the ToolPad. You may want to use this feature for immediate changes between different sets of parameters of the same Tool.

SELECTING: To select a Tool from the ToolPad, click down on the pad with the mouse and hold it. Under the mouse, a pop-up menu appears with sixteen tools displayed. (The unfilled slots are displayed as empty pipes.) Move the mouse pointer to the Tool you need and lift up. The ToolPad now displays that Tool.



EDITING: To edit a PadTool, first select it, then use the Edit PadTool Controls command in the Windows Menu. Or, you can hold down the Shift key on your Amiga keyboard while clicking on the ToolPad. This opens the Control window for the Tool, if one exists. Some Tools do not have any parameters to change. You may keep the Control window open for the Tool, even as you use the Tool to process your song. You can have each ToolPad Tool's Control window open at the same time.

TOOLIZING: Tools placed in the ToolPad can process all of the notes in a section of your song. To use a Tool in this way, use the Toolize command, which can be found in both the Edit and Track (Group) menus. From the Edit Menu, the Toolize command processes all notes on all Tracks between the Edit Flags, unless you activate the Solo button. In this case, the Tool processes just the Tracks that are Soloed. (See Chapter 8.) From the Track/Group Menu, the Toolize command processes all notes in the currently selected Track or Group of Tracks, respectively. (See Chapters 4 and 5.)

For example, you may wish to remove all Pitch Bend events from one of your Tracks. The Event Filter Tool lets only specified events pass through it, while blocking all others. Drag the Event Filter Tool from the ToolBox and place it in the ToolPad. Open the Edit window for the Event Filter by selecting the Edit PadTool command from the Windows Menu and set the Event Filter to remove Pitch Bend events. Select the Track you'd like to change by clicking on it. Go to the Track menu and select the Toolize command. The Event Filter Tool processes your Track instantly and removes all Pitch Bend events.

REPLACING: The ToolPad contains up to sixteen Tools. If the ToolPad is full, and you want to replace one of the sixteen resident Tools with a Tool that isn't in the ToolPad, do the following: Select the Tool to discard by choosing it from the pop-up menu so that it appears in the ToolPad on the screen. Then drag the new Tool from the ToolBox onto the ToolPad. The new Tool replaces the displayed one.

Tools in the ToolBox

When you first run B&P Pro, it automatically loads a set of Tools ready to use. Tools are not actually a part of the B&P Pro program. They are separate entities, stored in separate files on disk; therefore, you can decide which Tools you wish to use and which you don't. B&P Pro loads only the ones you want. As new Tools become available from The Blue Ribbon SoundWorks, Ltd. (SEND IN YOUR REGISTRATION CARD FOR MORE INFORMATION) and other sources (including MacroTools that you or others create), you can add them to your collection.

B&P Pro keeps track of which Tools belong in the ToolBox by placing their names in a file called "S:Tools". Every time you load a new Tool into B&P Pro, its name is added to "S:Tools". When you remove a Tool, its name is deleted from "S:Tools".

Although no limit exists as to the number of Tools you can load at one time, keep the following in mind:

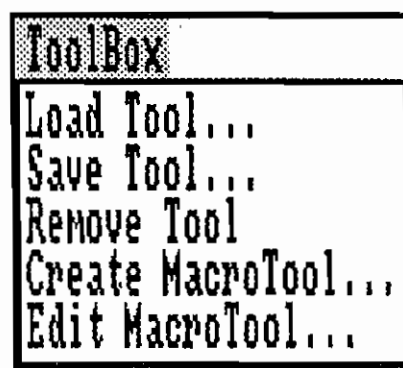
- * Each Tool uses memory in your computer. If you are running B&P Pro on an Amiga with only one meg of memory, you should load only the Tools you use on a regular basis. The Tools are extremely compact, but there is no point in keeping something around if you aren't using it. You can always load it in if you decide you need it.

- * Each Tool adds slightly to the amount of time required to boot up B&P Pro, since B&P Pro loads each Tool as it starts. On a floppy disk set-up, this factor is a consideration.

- * Finding a Tool in a ToolBox filled with dozens and dozens of Tools takes more time.

From the ToolBox Menu, you can organize your ToolBox by loading new Tools, saving Tools you have created or loaded from somewhere else, and removing Tools you no longer need.

LOADING: You may wish to add new Tools to your collection, or load a Tool that you have previously removed. To load a Tool, select Load Tool from the ToolBox Menu. Since the ToolBox Menu is accessed from the ToolBox Window, remember to click on the window to activate it, then move the mouse up to the Menu Bar to make your selection. B&P Pro opens a file requester. (See Chapter 20 for information on the file requester.) From the list, choose the Tool to load. Once the Tool is loaded, B&P Pro remembers from where you loaded it and loads it automatically each time you run B&P Pro.



SAVING: You can also save a Tool. There are two uses for this command:

- * Use it to save MacroTools you create with the Create-A-Tool feature. If you don't save these MacroTools to disk, B&P Pro deletes them when you quit.

- * Use it to place all of your Tools into one convenient directory. When you load a new Tool from disk, B&P Pro expects to load the Tool from that disk every time it runs. This can cause lots of disk swapping. The solution is to save the Tool to the same disk or directory where you keep all of your other Tools. Next time, B&P Pro loads the tool from the new directory.

REMOVING: To remove a Tool, select it by clicking on it, then choose the Remove Tool command from the ToolBox Menu. B&P Pro opens a requester which gives you a chance to confirm the removal. If you remove a Tool that is currently in use in a PipeLine or ToolPad, B&P Pro removes all copies of the Tool as well. Once you have removed a Tool from the ToolBox, it no longer loads automatically, but it is not deleted from disk.

CREATING: You can actually create your own Tools with the Create-A-Tool feature (See Chapter 7.) These are called MacroTools. To start building a new MacroTool, select the Create MacroTool command from the ToolBox Menu.

EDITING: Once you've created a MacroTool with Create-A-Tool, you can edit it with the Edit MacroTool command in the ToolBox menu.

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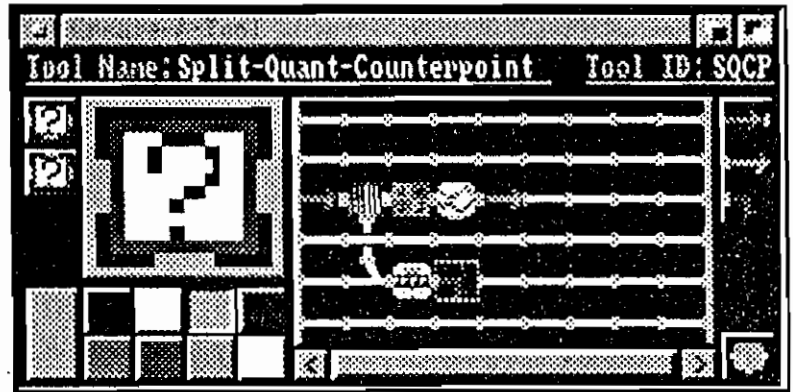
chapter seven

create-a-tool

The Create-A-Tool window allows you to create and edit your own MacroTools. A MacroTool is a Tool created by combining several Tools into one. Like the Tools provided with this program, a MacroTool has one input, one output, and an icon representing it. Not only is this a convenient way to keep your PipeLines from overcrowding (you can take a string of commonly used Tools and create a MacroTool to replace them), but it's a very potent method for making specialized Tools of your own design.

MacroTools: A List of Ingredients

A UNIQUE NAME: Each Tool has a unique name and a four-letter identifier. For example, a Tool that creates random harmonies could be called "Split-Quant-Counterpoint" and the identifier could be "SQCP." You use the full name, "Split-Quant-Counterpoint," to describe the Tool for your reference. B&P Pro uses the identifier, in this case "SQCP," for internal operations that require speed and compact size. If you choose not to give an identifier a name, B&P Pro automatically assigns one.



AN ICON: Each Tool must have an icon to show in the ToolBox, PipeLine and/or ToolPad. In addition, if the Tool has a branching output and can send data two places at once, it requires two icons: one for when the Tool is above the receiving Tool (the connector is on the bottom of the Tool) and one for when the Tool is below the receiving Tool. (The connector is on the top of the Tool.)

TOOLS: A MacroTool consists of a collection of interconnected Tools. You arrange these on a grid of PipeLines, much like the PipeLines in the Main Screen. For example, our Split-Quant-Counterpoint MacroTool feeds notes to a Keyboard Splitter Tool, which sends notes below the split point to an Echo Tool. The notes at or above the split point enter the Quantize Tool, then, the CounterPoint Tool.

INPUT AND OUTPUT: A MacroTool can have only one input; therefore, you must identify the Tool that accepts incoming notes as the input of the MacroTool. Also, you must label the last Tool in the MacroTool as the output. In addition, if this MacroTool is capable of sending a branched output, you must identify the Tool that sends notes down the branch. Your MacroTool will not work without a specified input and output source.

TOOL PARAMETERS: Some of the Tools in the MacroTool may have parameters that you can preset. For example, you might, in your MacroTool, use a Transpose Tool that always shifts a note by a predetermined interval. This requires presetting that component Tool in your MacroTool.

Constructing Your MacroTool

To construct a MacroTool, open the Create-A-Tool window by selecting Create MacroTool from the ToolBox menu. This menu is only available from the ToolBox window. The Create-A-Tool window opens with a new, blank MacroTool, ready to assemble.

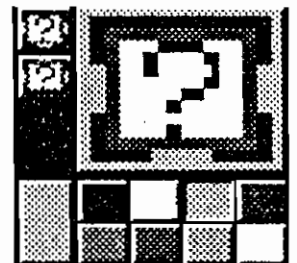
Naming

Across the top of the window are two text entry fields, Tool Name: and Tool ID:. B&P Pro automatically supplies a default name and a unique default ID. To name your Tool, click on the Name: field and enter a description of your Tool. Changing the ID is optional.

Tool Name: Split-Quant-Counterpoint Tool ID: SOCP

Painting

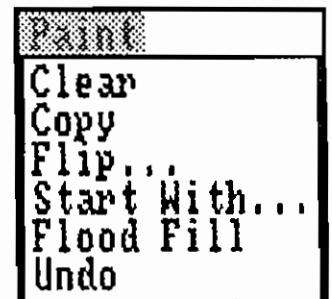
On the left side of the Create-A-Tool window is a box with the enlarged icon in it. Since a Tool can have two icons, both are displayed at their normal size to the left of this box. To choose which icon is enlarged, click on it. Below the box is a Palette of eight colors. To paint the icon, select the paint color by clicking on it in the Palette and draw your icon in the box. Just as with any other paint program, draw by clicking down with the mouse and dragging it. The MacroTool window displays the selected color in the tall box to the left of the Palette. You may click on this tall box to cycle through the colors in palette.



From the Paint Menu, you can select commands to clear, flip, copy, initialize, flood fill, or undo your work:

CLEAR: sets the entire icon to the color currently selected in the Palette.

COPY: duplicates your MacroTool icon. B&P Pro needs the



extra icon for MacroTools that branch off to Tools above or below. You need to alter the duplicate so that the placement of the output Pipe inverts. If you've created a branching MacroTool, draw your main icon, then duplicate it with the Copy command and edit the position of the outgoing Pipe to go up.

FLIP: turns your icon around an axis. To flip from top to bottom, choose Flip Vertically. To flip from left to right, choose Flip Horizontally.

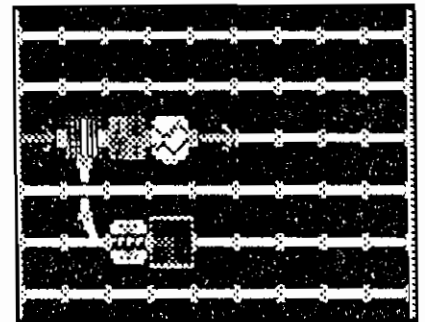
START: provides a choice of four pre-defined icons. To select a pre-defined icon (a timesaver), drag the mouse over your icon of choice and lift up. That icon now appears in the Paint Box.

FLOOD FILL: paints an entire area of the icon with the selected color. To use the Flood Fill command, first select the fill color and the Flood Fill command. Then, with the mouse, touch the area to be painted and click the mouse. For instance, if you have a red shape you'd like to make yellow, select yellow from the Palette, select Flood Fill from the menu, then click on the center of the shape. It's now filled with yellow.

UNDO: reverts the icon to the state that existed prior to your most recent action.

Adding and Connecting Tools

ADDING: In the large box on the right half of the Create-a-Tool window sit six PipeLines. To construct your MacroTool, drag your Tools of choice from the ToolBox and place them on any one of the PipeLines. Determine which PipeLine is the input line and place the first Tool there. Continue by placing the Tools that follow it to the right of the input Tool on the PipeLine. Should you wish to reposition the placement of a Tool in the PipeLine, select it by clicking on it once. A red box appears around it. Then press either the Left or Right Arrow keys to move it.



DUPLICATING: To duplicate a Tool already in the Create-a-Tool window, drag the Tool to a new location. B&P Pro creates an exact copy of the Tool, including its parameter settings.

REMOVING: To remove a Tool, select it, then press the Delete key.

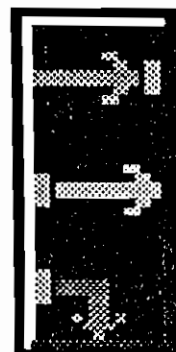
CONNECTING: If a Tool has a branching output, place a Merge Tool on another PipeLine. (The Merge icon looks like a Pipe with another Pipe feeding into it above from the left.) This second PipeLine is now active and Tools can be placed in it as well. When you first place the Merge Tool in the second PipeLine, it may not line up with the source Tool because they have not yet been connected. To connect a Merge Tool with another Tool, click on the

source Tool (the Branching Tool,) select Connect (AK) from the PipeTool menu, then click on the target Tool (the Merge Tool). The two icons are now connected and the display is redrawn with everything positioned appropriately.

If your PipeLine is long and you start running out of room, scroll it forward by using the slider and arrows at the bottom of the display. Your MacroTool can be as long as you need.

Determining the Input and Output(s)

To the right of the PipeLine grid are three arrow-shaped icons. Drag these onto your Tool layout to specify the input and output(s).



INPUT: the top icon is a blue arrow that selects the input. Drag and place it to the left of the first Tool in your MacroTool lineup. All notes coming into the MacroTool pass through here first. You cannot delete the input arrow. If you want to send the input to a different PipeLine, drag another blue arrow to it; the arrow to your previously selected PipeLine automatically disappears.

NORMAL OUTPUT: the middle icon is a red arrow that represents the Normal Output. Drag it to the right of the last Tool in your Macro sequence. Whatever comes out of that last Tool comes out of the MacroTool as a whole. Unlike the Input arrow, you can have more than one Normal Output per MacroTool because you may use several PipeLines in your design. The MacroTool merges notes coming out of all Normal Output icons. If you wish to remove a Normal Output icon, select it, then hit the Delete key.

BRANCHING OUTPUT: the bottom icon is a purple arrow that represents the Branching Output. It is optional. Whereas every MacroTool requires an Input and an Output, a MacroTool requires a Branching Output only when the MacroTool needs to send events off to a second PipeLine. Install the Branching arrow in the same way that you install the Output arrow.

Once you have a Branching Output, the alternate icon, on the left of the Paint Box, comes into play. This alternate icon behaves identically to the original, except that it branches off in the opposite direction. In this way, you can have a MacroTool that connects to a Tool above and to a Tool below.

Setting the Tool's Controls

Many of the Tools that constitute your MacroTool have parameters, or Controls, that you can preset. For example, the Triad Tool (included with B&P Pro) uses two Transpose Tools to shift the input note up a third and up a fifth. It is an example of a MacroTool. If you load the Triad Tool into the ToolBox and then double-click on it, Create-A-Tool shows the structure of the MacroTool. You can then open the Control window of each Transpose Tool to see its parameter settings. As an example, you can edit the parameters to create a chord inversion by changing the second Transpose Tool from shifting up a fifth to down a fourth.

Installing, Removing, Using, Altering, and Testing

INSTALLING: Once you have created a MacroTool, you must save it to disk, otherwise B&P Pro forgets it when you quit. To save a MacroTool, click once on the MacroTool in the ToolBox, then select the Save option from the ToolBox menu. B&P Pro opens its file requester. Create a new file name for your Tool. Do not use the name of an existing Tool, or B&P Pro overwrites the older Tool. B&P Pro saves your MacroTool to that file. From now on, when B&P Pro runs, it automatically loads your MacroTool.

REMOVING: If you don't like what you've created, you can remove your MacroTool by clicking on it in the ToolBox and selecting the Remove option from the ToolBox menu. B&P Pro removes the MacroTool from the ToolBox, removes all copies of it from your composition and no longer loads this Tool at boot time. The MacroTool, however, is still on your disk; you can leave it there or delete it by using the Workbench or CLI (Command Line Interface.)

USING: You can use your MacroTool just as you would a normal Tool. You can place it in a PipeLine to process notes in real-time, or in a ToolPad, to process notes in a section, or on a note-by-note basis.

ALTERING: You can always go back and edit your MacroTool. To do so, double click on the MacroTool's icon in the ToolBox or select it and use Edit MacroTool in the ToolBox menu. The Create-A-Tool Window opens with your MacroTool, and you can edit it in any way you'd like. If you have already started to use this Tool, the versions that are in use are not affected by editing the master. Once you are satisfied with the changes you have made, you must once again save the MacroTool to disk.

TESTING: When you're creating a new MacroTool, you may want to try it out before saving it to disk. To test it out, drag the Test Tool at the bottom right of the Create-A-Tool window into a PipeLine in the Sequencer window. If you don't like the results, you can continue editing the MacroTool. The Test Tool automatically incorporates the changes, so that you can quickly edit, test, and re-edit until you're satisfied with the MacroTool.

Making MacroTools out of MacroTools

Just as with any other Tool, you can place a MacroTool in any other MacroTool you build; however, you may not place it inside itself. Nor can you place it within another MacroTool that is contained within it. The Create-A-Tool Editor makes sure this doesn't happen. If you drag a MacroTool into the definition of itself, it won't stay there.

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chapter eight multi-track editing

Although B&P Pro includes a sophisticated Sequence Editor, you can also perform many editing functions from the Tracks window. In particular, you can Cut, Copy, Delete and Paste individual Tracks, or perform these functions globally on all Tracks. These operations involve the Edit Flags, Edit Menu, and ClipBoard.

Preparation

Before you actually edit, you must first choose a section, select the Tracks and then determine the destination of the edit. All operations use "Clips," which store and retrieve edited information. When editing in the Tracks window, you can use the Clips in two ways:

- * The Clip Buffer is an internal buffer that stores a single Clip. The Cut and Copy commands replace the previous contents of the Clip Buffer with the new Clip; the Paste and Mix commands copy the contents to the Tracks. When you are using the Clip Buffer, Clips are essentially invisible.

- * The ClipBoard, described later in this chapter, allows you to work with any number of Clips. The Cut and Copy commands add a new Clip to the ClipBoard, but the Delete command does not; the Paste and Mix commands copy the selected Clip to the Tracks. To use the ClipBoard instead of the Clip Buffer, select "Use ClipBoard" from the Preferences menu. To open the ClipBoard, select ClipBoard from the Windows menu or double-click on the ClipBoard icon.

The Edit Flags

The Edit Flags sit between the buttons and the Track (or notes) display. Position these Flags to indicate where you want your edits to occur. The left Edit Flag, designated by a triangular flag with the mast on the right, identifies where an edit operation starts, while the right Edit Flag, designated by a triangular flag with the mast on the left, identifies where an edit operation ends.



POSITIONING: To position the Flags, drag them with the mouse. If the desired position is not visible in the display, first scroll the display so that the desired position is

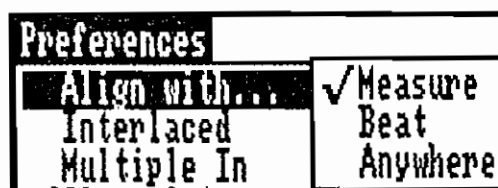
visible, then drag the Flag(s) into position. Dragging a Flag all the way to the left tells B&P Pro to place it at the very beginning of your song or Track. Dragging it all the way to the right indicates that you want it placed at the end of the song or Track. Notice that as you drag the Flag, its position is shown in the main LED display in the Transport Controls window.



You can also position the Flags by entering exact values with the Set Flags Window. To enter exact values, open the Set Flags Window from the Windows Menu and enter the values in Measures, Beats, and Clocks. Once you have entered a number, remember to press the Return key, which enters the new value and moves the Flag to its new position.



ALIGNMENT: You can specify whether the Flag should automatically align with Measures, Beats, or Anywhere, by selecting the desired option in the Preferences Menu (Tracks window). If you select Align with Measures, the Edit Flag always sticks to the measure boundary just to the left of, or under, the place where you drag it. If you select Align with Beats, it sticks to the beat boundary, and if you select Align with Anywhere, it stays exactly where you place it. Although you set Alignment from the Tracks window, the Sequence Editor uses your choice as well.



If you place the Edit Flags off measure boundaries, the Time Signature and Key & Scale/Mode Parameters are not incorporated in the edit, because these must always align with measure boundaries.

Selecting Tracks to Edit

You can use editing commands on all Tracks, a selected Track, or a group of Tracks. To edit all Tracks, make sure the Normal/Solo/Mute button is in Normal mode, then mark off the desired area and use the appropriate edit command.



To edit one Track only, select the Track, activate the Solo mode and choose the appropriate edit command. This is the only option you have in the Sequence Editor, since you can only see one Track at a time.

To edit an entire Group of Tracks, select that group with the Group Number button (see Chapter 5), solo it with the Solo button and choose the appropriate edit command.

The Edit Commands

Once you have set the Edit Flags, select the desired operation from the Edit Menu. All of these commands, once executed, automatically turn off the Solo button, so that you can quickly listen to your changes.

CUT: (AX) Cuts a section from your Song or selected Track. Cut removes the section between the Edit Flags and shifts everything to the right of the section to the left Edit Flag. This is analogous to cutting out a section of tape physically and splicing the remaining ends together. You can use the Paste command to insert it elsewhere in your Track, or Mix to merge the Clip with existing notes. Notice that the Solo button is automatically turned off, after the cut is made. If you plan to Paste into just one Track, you must reactivate the Solo button.

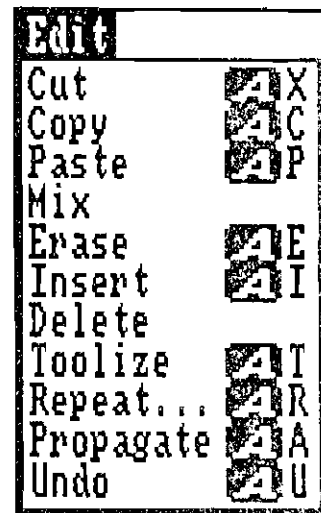
COPY: (AC) Copies a section, without actually removing it, for use with the Paste or Mix commands. Nothing visibly happens, but the section between the Edit Flags is now available for Pasting.

PASTE: (AP) Inserts a cut or copied section into the Song or Track. You need only set the left Edit Flag because the length of the inserted section is determined at the time it is cut or copied. For example, if you cut a four-measure section, the Paste command inserts those same four measures and moves everything to the right of the insertion by four measures. You may do multiple Paste operations with the same section; it will not be changed until the next Cut or Copy command. Remember to hit the Solo button before you Paste, if you intend to Paste into just one Track or Group.

MIX: Merges a Copied or Cut section with the existing Song or Track. As with Paste, you need only set the left Edit Flag. Unlike with Paste, the Mix command does not increase the length of the Track; it simply adds the notes to the notes already in the section.

ERASE: (AE) Clears the section between the left and right Edit Flags. Erase removes all events and your Sequence is silent during this section. This is analogous to erasing a section of tape.

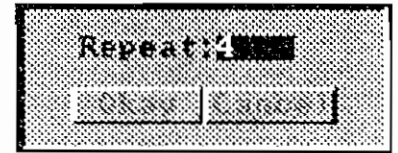
INSERT: (AI) Inserts a blank space in your music. This command comes in handy when you want to add a section to your Song somewhere in the middle. Insert the section, then use whatever methods you prefer to fill the gap with music. For instance, in an 8 measure piece, if you Insert while the Edit Flags encompass measures 5 through 8 inclusive, then measures 1 through 4 will remain the same; measures 5 through 8 will be empty; and measures 9 through 12 will contain the data from old measures 5 through 8. In other words, the section contained between the Edit Flags will be shifted to the right of the right Edit Flag, and the section between the edit flags will now be empty.



DELETE: To delete a section between the right and left Edit flags, use the Delete command. This command operates identically to the Cut command, but does not place the deleted section into the clip buffer or ClipBoard.

TOOLIZE: (AT) Uses the currently selected Tool in the ToolPad to process the section marked off by the Edit Flags. This is an extremely useful and versatile command. (See Chapter 6.)

REPEAT: (AR) Repeats a section of your Song one or more times. Repeat makes multiple copies of the section designated by the Edit Flags and inserts them in the Song. When you select the Repeat command, a requester opens and asks you to specify the number of times to repeat. Note that this is NOT the number of times that the section should play, but the number of times it should repeat. Hence, selecting "1" will repeat the section one time. The repeated section will appear at the end of your song, and not immediately following the section you are repeating. Enter a number and select Okay to repeat, or Cancel, to abort.



PROPAGATE: (AA) The Propagate command is the only Edit command used in association with the A-B-A feature of the Song Construction window. (See Chapter 9.) If you make a change to an A-B-A section and you'd like the change to be reflected in all other copies of that specific section, use the Propagate command in conjunction with the left Edit Flag. Place the left Edit Flag on or within the boundaries of the section to be propagated. B&P Pro then rewrites all occurrences of that section to include the change.

For example, if you change some notes in the first instance of your "A" section, place the left Edit Flag within or on that section's boundaries and the Propagate command changes all other instances of your "A" section. The Propagate command always uses the first instance of each section to make its changes; therefore, in order to use Propagate successfully, you must always edit the first section.

UNDO: (AU) Returns your Song to its state prior to the last operation. You may very well use this command more than any other feature of B&P Pro. In addition to undoing all of the commands in the Edit menu, it undoes other actions, including the last time you recorded.

Clean Cuts

Normally, when B&P Pro creates a Clip, it extracts all notes up to the right Edit Flag. This is the situation when Clean Cuts is not selected. Regardless of whether a note extends across the Flag's boundaries, the Clip includes the note, which is at times a less than desirable situation. If a note is held over several measures, and the cut occurs somewhere in the middle, you may prefer to break that note into two notes, one before and one after



the cut. Select the Clean Cuts option from the Preferences Menu and notes that straddle Edit boundaries are cut at the end of the Clip. In addition, Paste merges identical notes on either side of the Clip boundary.

The ClipBoard

The ClipBoard stores Clips and provides a convenient way to organize sections of music as you work on a Song. The ClipBoard can store an unlimited number of Clips. To avoid confusion, you can assign each Clip a meaningful name. You can load and save Clips from and to disk, as well as move them from one Track to another.

Opening the ClipBoard

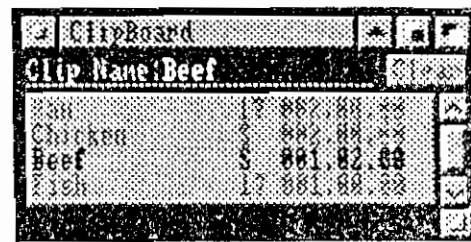
You can use the ClipBoard with any window that has a set of Edit Flags. To open the ClipBoard, double-click on its icon along the right side of the screen (the icon that looks like a clipboard), or select ClipBoard from the Windows menu.



To send Clips to the ClipBoard, you must also select Use ClipBoard from the Preferences menu. A check mark appears beside Use ClipBoard to indicate that all Clip editing operations now operate through the ClipBoard instead of the Clip Buffer.

The ClipBoard Window

The ClipBoard window displays the list of Clips, with the currently selected Clip above the list. Each Clip in the list displays its name, the number of Tracks in the Clip, and the length of the Clip in song-time.



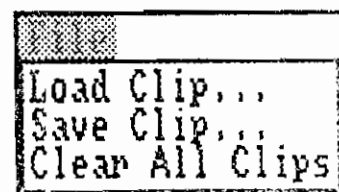
SELECTING: To select a Clip, click on its name. Use the scroll bar and arrows to scroll the Clip list up or down.

RENAMING: To change the name of the selected Clip, enter the new name after the Clip Name: prompt. If you want, you can leave the name that B&P Pro assigns.

REMOVING: To remove the selected Clip, select the Clear button.

LOADING: To load a previously saved Clip, use the Load Clip command from the File menu.

SAVING: To save the selected Clip to disk, use the Save Clip command from the File menu. Once the B&P Pro file requester



opens, select or enter a file name and click on Save.

DELETING: To delete the entire list of Clips, select the Clear All Clips command from the File menu.

Editing with the ClipBoard

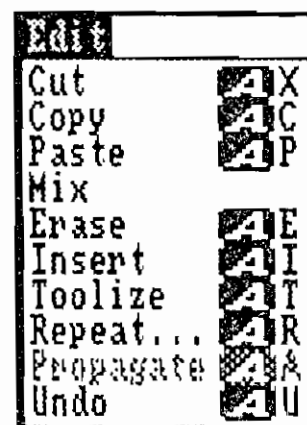
When you enable the ClipBoard, the four Edit menu commands, Cut, Copy, Paste, and Mix, pass Clips back and forth with the ClipBoard. To Cut, Copy, Paste, or Mix an individual Track or Group of Tracks, instead of all Tracks, click on the Solo button before selecting the command.

Here is how each command behaves:

CUT (AX): removes the section between the Edit Flags from the Sequence and places it in the ClipBoard. Notice that the new Clip is highlighted.

COPY (AC): duplicates the section between the Edit Flags and places it, highlighted, in the ClipBoard. The Sequence remains unchanged.

PASTE (AP): The Paste command inserts the selected (highlighted) Clip at the point marked by the left Edit Flag. The Clip remains in the ClipBoard, so that you can make multiple pastes.

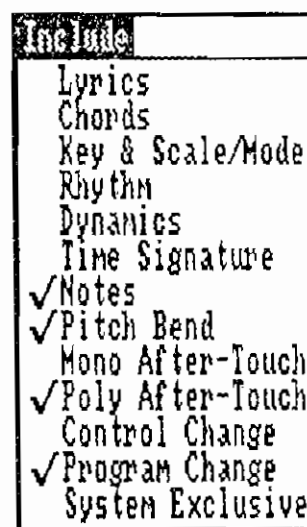


You can control which Parameters and Event types you paste with the Include menu. (See below.) You can also control which Tracks receive pasted or mixed multi-track Clips.

MIX: The Mix command merges the selected Clip into the target Track(s). This command excludes Parameters from the mix. You can, however, choose which MIDI Events to mix with the Include menu.

The Include Menu

The Include menu, available only when you have selected the ClipBoard window, selects the specific Parameters and MIDI Events to include in the pasting or mixing. By default, the Include menu includes everything but System Exclusive events. Omit those you don't want by clicking on the particular items in the menu. Note that you can only include MIDI Events and not Parameters when you are mixing. In the Include menu, Parameters are comprised of the Lyrics to Time Signature items, inclusive, while the Notes to System Exclusive items comprise MIDI Events.



For example, you might have a Clip with both Note and Time Signature changes in it; however, the target Track contains a different Time Signature. By removing Time Signature in the Include menu before pasting, you avoid inserting a conflicting Time Signature into your Track(s). The Notes, though, which you do want, are inserted unscathed.

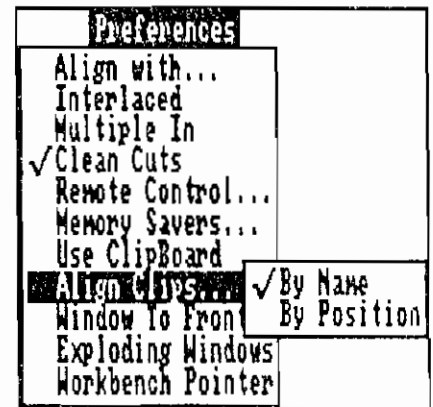
To toggle several Include menu selections at once, hold down the right mouse button while the Include menu is open and click the left mouse button over those selections you want to toggle. This act can save you a great deal of time when turning several selections on or off.

Multi-Track Clip Alignment

As we mentioned earlier, Clips may contain portions of several Tracks. Depending upon whether you're working with one song or several, you may want to paste or mix multiple Tracks differently. The Align Clips... selection in the Preferences menu gives you two ways to paste or mix multi-Track Clips:

When you select By Name, B&P Pro pastes or mixes multi-Track Clips into Tracks with the same names as the Tracks from which the Clips were cut or copied. This method is very useful for moving Clips between songs, since you do not need to enforce a particular Track order for all of your songs. B&P Pro pastes or mixes only the Tracks that have matching names in the song; other Tracks are not pasted, nor mixed, but do remain in the Clip.

When you select By Position, B&P Pro pastes or mixes multi-Track Clips into the selected Track, and Tracks below, until all Tracks are pasted or mixed. This method is useful for moving Clips between Tracks in the same song, or between songs without regard to Track names. Pasting and mixing "wrap around" from bottom to top, if necessary. For example, if you paste starting three Tracks from the bottom and five Tracks are in the Clip, B&P Pro pastes the last two Clip Tracks in the top two Tracks of the song.



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chapter nine

song construction

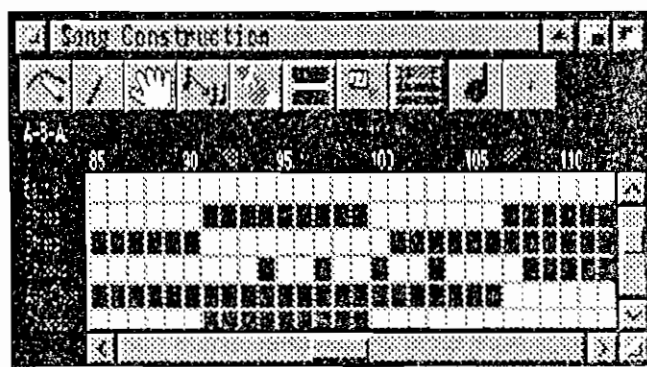
The Song Construction window provides powerful song arrangement functions, both by A-B-A layout and by arbitrary groups of measures. You can insert, delete, or move any block you wish, and create and edit selected measures. The Song Construction window also supports powerful A-B-A lists, which gives you the option of locking measures to sections and rearranging your song by rearranging the sections.

An Overview

To open the Song Construction window, double-click on the Song Construction icon along the right side of the screen, or select Song Construction from the Windows menu.



The Song Construction window consists of four major parts: Command Buttons, A-B-A Strip, Edit Flags, and Track display.



Command Buttons

The eight buttons at the top of the window are the Command Buttons. As you click each one with the mouse, the mouse's icon changes. All of these buttons have keyboard equivalents as well. Set the Command Buttons to determine how you use the mouse. The following list describes each button briefly. Later in this chapter, we'll delve into greater detail.

THE PENCIL: function key "F1," inserts a new measure or A-B-A section.



THE MAGIC WAND: function key "F2," opens the editing window for the selected measure or A-B-A section.



THE HAND: function key "F3," grabs and drags measures and A-B-A sections.



THE DUPLICATOR: function key “F4,” creates a copy of the selected measure or A-B-A section.

THE ERASER: function key “F5,” deletes measures and A-B-A sections.

THE TOOLPAD: function key “F6,” contains selected Tools and processes measures and A-B-A sections with the currently-displayed Tool.

THE BOUNDING BOX: function key “F7,” working in conjunction with the Hand, Duplicator, Eraser, and ToolPad buttons, lets you draw a rectangle around a group of measures and then Drag, Duplicate, Erase, or Toolize them.

THE LOCK TO A-B-A BUTTON: function key “F8,” working in conjunction with any other Command button (except Bounding Box), lets you move, duplicate, create, erase, or toolize the actual measures belonging to an A-B-A section, as opposed to just changing the description of the A-B-A section alone.

THE ZOOM IN/OUT BUTTONS: These are the two buttons to the right of the Command Buttons. They control the sizing of measures displayed in the Song Construction window. The Zoom In button, the large note, enlarges the display one step. This gives you finer control, but shows fewer measures. The Zoom Out button, the tiny note, reduces the display one step. This lets you see more measures, with a loss of fine editing control.

A-B-A Strip

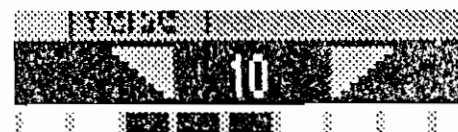


The narrow area between the Command Buttons and the Edit Flags contains the current A-B-A sections. When you open the Song Construction window for the first time, the strip is completely blank.

A-B-A sections can be named “A,” “B,” “C,” etc. You can also assign meaningful names such as “Verse,” “Chorus,” “Refrain,” “Bridge,” and “Finale.” B&P Pro automatically numbers each section in the order it appears in the strip, and assigns different colors to each type of section so that, at a glance, you can see transitions between sections.

The Edit Flags

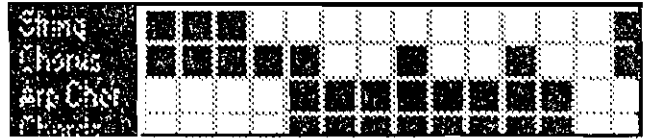
The Edit Flags work as they do in the Tracks window and share the Edit menu. (See Chapter 8.) Note that the associated editing commands only affect the measures in



the Tracks; they do not affect the A-B-A layout. Also, Editing operations work over all Tracks; you cannot select only one Track to edit.

Track Display

The Track Display shows your Tracks as a series of small boxes. Each box represents a measure in a Track. Above the Tracks are the measure numbers; this gives you an idea of where you are in your song. If you have time signature changes in your music, the boxes can be different sizes. B&P Pro displays Track names to the left.



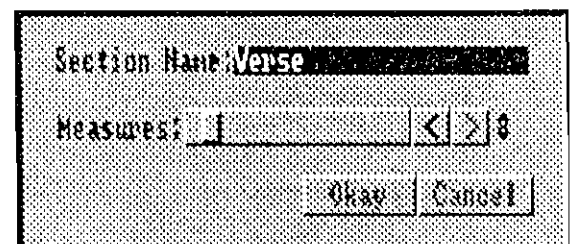
White boxes contain (or carry over) at least one note. Grey boxes contain none. Boxes may change color during moves, deletions, or editing operations. (See "Clean Cuts" below.)

A-B-A Editing

A-B-A editing lets you label each section of your song with a letter, number or name. For example, you can call the verse "A," or more literally, "Verse." Once you define your song in this manner, you can use the A-B-A list to rearrange the song by repositioning, copying, adding, and/or deleting sections. Thereafter, you can make changes to the first of each section and propagate those changes throughout your song. (Propagate, in this context, means to copy the changes made in the first occurrence of a section to all other occurrences of that particular section within your song.)

When setting up the A-B-A layout, make sure the "Lock to A-B-A" button is not selected. This ensures that B&P Pro does not affect your music.

CREATING: To create a new A-B-A section, select the Pencil and click in the A-B-A strip. The A-B-A requester opens.



You can enter a descriptive name in the "Section Name" field, or leave the default name supplied by B&P Pro. Then, you select the length of the section (in measures) by dragging the slider to the proper length or by clicking the arrow buttons next to the slider.

Select Okay to confirm your selections, or Cancel, to leave without creating a new section. If you clicked Okay, B&P Pro inserts a colored bar of the proper length into the A-B-A Strip. B&P Pro numbers each section automatically, so that you can quickly tell how many instances of each section are in your composition.

EDITING: To change a previously-defined section, select the Magic Wand, then click on the desired section. B&P Pro opens the A-B-A requester again with your section displayed.

If you change the name of the section, B&P Pro creates a new section and renames this one rather than renaming the other sections. If you change the length, B&P Pro changes the length of all other sections with the selected name.

MOVING: To move a section, select the Hand, then grab and drag the section to its new position. If you have also set the "Lock to A-B-A" button, the measures under that section move as well. Otherwise, only the bar denoting the section moves. This procedure is useful when first setting up your A-B-A layout.

DUPLICATING: To duplicate a section, select the Duplicator button, then click on the section you want duplicated and drag it to a new position. If you have also set the "Lock to A-B-A" button, B&P Pro duplicates the measures under that section as well. This is a fast way to set up a song: you can enter one verse and one chorus, then duplicate them as needed.

DELETING: To delete a section, select the Eraser, then click on the section to delete. If you have also set the "Lock to A-B-A" button, B&P Pro deletes the measures under that section as well.

TOOLIZING: To toolize a section, select the desired Tool from the ToolPad, select the "Lock to A-B-A" button, then click on the section to Toolize. Toolizing has no effect on the Song unless you lock the measures by selecting the "Lock to A-B-A" button.

Editing Measures

You can use the Song Construction window to work with individual measures as well as A-B-A sections. Except for the "Lock to A-B-A" button, all of the command buttons work with measures.

CREATING: To create a new measure, select the Pencil, then click on a measure. B&P Pro inserts an empty measure in front of the measure you selected. Note that B&P Pro creates new measures in only one Track; if you want to create a new measure in each Track with the Pencil, you have to work with one Track at a time. If you want to insert a new measure for every Track in your song, use the Insert command found in the Edit menu in conjunction with the Edit Flags.

EDITING: To edit a measure, select the Magic Wand then click on the desired measure. B&P Pro opens the Sequence Editor window at the selected measure. (See Chapters 11, 12, 13 and 14.)

MOVING: To move a measure, select the Hand, then click and drag the measure to its new location. You can move measures between Tracks as desired.

DUPLICATING: To duplicate a measure, select the Duplicator, then click on the desired measure and drag it to the desired destination. B&P Pro creates an exact duplicate of the measure and places it at that destination.

ERASING: To erase the contents of a measure, select the Eraser and click on the appropriate measure. Like creating, erasing affects only one Track at a time. If you want to erase a measure in every Track in your song, use the Erase command found in the Edit menu in conjunction with the Edit Flags.

TOOLIZING: To toolize a measure, select the desired Tool in the ToolPad, then click on the measure to Toolize. If you want to Toolize a measure for every Track in your song, use the Toolize command found in the Edit menu in conjunction with the Edit Flags.

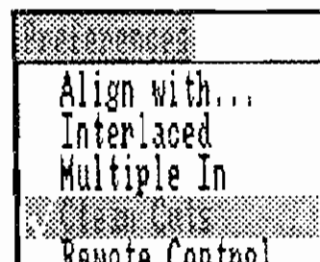
Editing Groups of Measures

You can move, duplicate, erase, delete, or toolize an arbitrary block of measures by using the desired command button with the Bounding Box. First, select the Bounding Box. Second, select the Hand, Duplicator, Eraser, or ToolPad. Third, click on the upper left corner of the box that you want to draw, and drag down to the lower right corner. If you selected the Hand or Duplicator, you can now drag the block to its new position; otherwise, B&P Pro erases or toolizes the selected measures immediately.

Remember, you can draw the Bounding Box to encompass one or more Tracks. B&P Pro includes all measures completely or partially enclosed by the Bounding Box. If you end up with more measures than you wanted, select Undo from the Edit menu and try again.

Clean Cuts

Earlier in this chapter, we noted that some white measures (which play one or more notes) may actually be playing notes begun in an earlier measure. If you move such a measure by itself, or if such a measure appears at the left of a group of measures selected by a Bounding Box, or appears directly to the right of a selected measure or Bounding Box, Clean Cuts determines what happens to that measure. Clean Cuts is selected from the Preferences menu.



With Clean Cuts selected, B&P Pro breaks the overlapping note in two so that it ends at the measure boundary, and then begins again at the start of the next measure. This means that the measure stays white, since it still plays a note — now a note of its own.

With Clean Cuts turned off, B&P Pro does not split overlapping notes. This means some white measures can turn grey, since they now play nothing. And, when you drag a note that lasts into the next measure, two or more white boxes appear at the destination instead of just one.

Propagating A-B-A Changes

B&P Pro can automatically copy changes made to a section or sections with the Propagate command. The Propagate command appears in three separate menus: the Song menu, the Track (Group) menu, and the Edit menu, all of which can be accessed from the Tracks window. The Propagate command behaves differently in each menu:

In the Song menu, the Propagate command copies changes made to the first instance of each section to all other instances of those sections throughout your song.

In the Track menu, the Propagate command copies the first instance of each section to all other instances of those sections, for the selected Track only. When you have a Group selected, the Track menu becomes the Group menu. In this case, the Propagate command, working on the Group as a whole, copies changes made to the first instance of each section to all other instances of those sections within the Group.

In the Edit menu, the Propagate command copies changes made to the first instance of a specific section to all other instances of that section. Mark the section by dragging the left Edit Flag on or within its boundaries. The Propagate command works on the section that contains the left Edit Flag; don't forget to set it.

In all cases, the Propagate command copies to all other instances of that section, only the changes made to the first occurrence of each section. You must make your changes to the first of each section in order to use Propagate.

chapter ten timing and tempo

B&P Pro has sophisticated timing controls. It can run on its own or synchronize (or be synchronized by) external devices. In addition to synchronizing with external MIDI Clock messages that vary the Tempo, B&P Pro can control the timing with the Tempo Map option. In addition, with its Time-Line Scoring feature, B&P Pro can position multiple musical segments in real time.

External Synchronization

B&P Pro can synchronize with external hardware in a number of ways. Among them are the usages of MIDI Clocks and MIDI Time Code. Let's take a quick look at both options:

MIDI CLOCKS: The simplest, most affordable and reliable method to synchronize B&P Pro with external sources involves using MIDI Clocks (sometimes called "Song Position Pointer"). MIDI Clocks work in the following way: The MIDI standard includes a set of commands designed to synchronize multiple devices via the MIDI cable. These commands include instructions to start, stop, continue, and reposition playback, as well as Clock tick instructions that B&P Pro uses to maintain accurate synchronization. Designed with music in mind, MIDI Clock ticks correlate directly with Measures, Beats, and Clocks. As each Clock tick comes in via MIDI, B&P Pro increments its position in song time. In this manner, the MIDI Clocks control both the tempo and the position of the piece as it performs.

SMPTE (MIDI TIME CODE): If you require synchronization to an external device such as an audio or video tape recorder, a second option, SMPTE time code, comes into play. SMPTE time code specifies the time in hours, minutes, seconds and frames, with no correlation to music time or tempo. To use Time Code with music, you must create a Tempo Map within B&P Pro to specify the music tempo at different points in time and assign a SMPTE Offset that sets a time in hours, minutes, seconds and frames to start the performance. In this manner, B&P Pro's Tempo Map and SMPTE Offset combine to translate real time into music time.

B&P Pro supports SMPTE in two ways: Directly and through MIDI Time Code. The direct solution requires SMPTE hardware interfaced with B&P Pro. This is made possible by

B&P Pro's expandable design. For example, The Phantom Accessory, included with B&P Pro, drives the Phantom SMPTE interface, which reads and writes SMPTE time code directly. (See Appendix B.) The second option, MIDI Time Code, is a protocol for communicating SMPTE time via MIDI. MIDI Time Code events specify the time in hours, minutes, seconds and frames. By listening to MIDI Time Code, B&P Pro can ascertain where in the piece it should be.

The Timing Menu

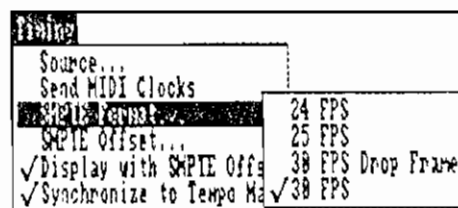
Use the Timing menu to determine how B&P Pro derives its timing and synchronizes with external devices. Let's look at each menu option:

SOURCE: determines the timing source. By default, B&P Pro runs on its internal clock, the Internal option. To synchronize with an external SMPTE source via MIDI, select MIDI Time Code. Select the third option, MIDI Clock, to synchronize with an external MIDI device that transmits MIDI Clock events to control the B&P Pro Tempo. This is also known as "MIDI Song Position Pointer."

When B&P Pro is synchronized with either external timing source, it disables the Lead In feature (no countdown before starting).

SEND MIDI CLOCKS: To synchronize an external MIDI device with B&P Pro, select Send MIDI Clocks from the Timing menu. This command instructs B&P Pro to send MIDI Clock events as well as Start, Stop, Continue, and Song Position events.

SMPTE: When using MIDI Time Code, set the SMPTE format in the SMPTE submenu. This option determines how many frames per second (FPS) B&P Pro displays in SMPTE time. The following frame rates are available: 24 Frames per Second, 25 Frames per Second, 30 Frames per Second Non-Drop Frame, and 30 Frames per Second Drop Frame. "Drop Frame" simply means that B&P Pro occasionally skips or "drops" frames to maintain accurate timing over long periods of time.



The following is a brief discussion of the various SMPTE frame rates:

24 FPS - This is the standard frame rate used with American motion picture film.

25 FPS - This is the standard frame rate used with European television, video, and film.

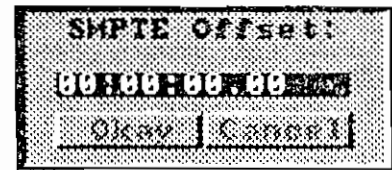
30 FPS (Non-Drop Frame) - This was the standard frame rate when television was first invented.

30 FPS (Drop Frame) - This is the standard frame rate for American color video today. The frame rate for color video is actually 29.97 FPS. If you use Non-Drop Frame, at the end of one hour, there will be 108 frames less than expected. Drop Frame corrects this deficiency by systematically dropping 108 frames per hour, so that at the end of an hour, the total number of frames will still be 108 frames short, but the frame numbers will be correct.

SMPTE Global Offset

If you synchronize your music through MIDI Time Code with SMPTE, your music rarely begins at the time 0:0:0.0. Instead, the beginning is most likely between a few seconds to several hours later. If you are scoring a film or video, each composition certainly starts at a different point in SMPTE time.

To adjust the SMPTE Offset, open the SMPTE Offset requester by selecting SMPTE Offset... in the Timing menu. Enter the song's starting time in SMPTE format; Hours, Minutes, Seconds, and Frames. B&P Pro plays your music when the SMPTE source, perhaps a video recorder or multi-track recorder, reaches this point in SMPTE time. Click on Okay to accept your settings and Cancel, to abort them.

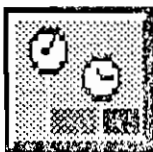


If you start the SMPTE source at a point after the SMPTE Offset, B&P Pro automatically calculates the song position based on the current SMPTE time, starting the song somewhere in the middle.

By default, B&P Pro adds the SMPTE Offset to song time to display the SMPTE time; however, if you'd rather see the song time without the SMPTE offset added, deselect Display with SMPTE Offset in the Timing menu.

The Tempo Map Window

If you are working with either the internal timer or SMPTE, you can use the Tempo Map window to create a series of Tempo Change commands to alter the pace of your music. Open the Tempo Map window by selecting Tempo Map from the Windows menu or click on the Tempo Map icon.



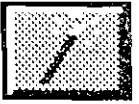
The Tempo Map window consists of seven control buttons and a graphic display of the song tempo over time. The graph shows constant tempo in blue, tempo changes in red, and the tempo at the end of each tempo change in blue. The top of the graph displays the measure numbers.

Briefly, the buttons are:

THE PENCIL: function key "F1," inserts new tempo changes.



THE MAGIC WAND: function key “F2,” alters a previously-defined tempo change.



THE HAND: function key “F3,” drags tempo changes at the boundaries.



THE ERASER: function key “F4,” deletes tempo changes.



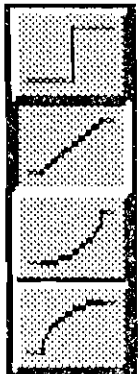
THE CURVE: defines the tempo change curve used to create new changes. When you click the mouse over the Curve button, B&P Pro opens a pop-up menu of the available curves. Drag to the new curve and let go of the mouse; the Curve button displays the selected curve. You can also press function key “F5” to step down through the curves or hold SHIFT and press “F5” to step up through the curves. The four curves are:

*Instant, a sudden tempo change;

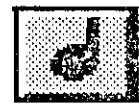
*Linear, a change that progresses at a constant rate;

*Logarithmic, a change that starts quickly, then eases into the final tempo;
and

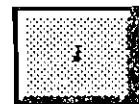
*Exponential, a change that starts slowly, then accelerates.



THE ZOOM IN BUTTON: zooms in on the graph. This shows you less of the graph, but gives you more accuracy in defining and moving tempo changes.



THE ZOOM OUT BUTTON: zooms out from the graph. This shows you more of the graph, but gives you less accuracy in positioning.



Creating a New Tempo Change

To create a tempo change, select the Pencil, then press and hold the mouse button down over the measure where you want the tempo change to begin. Drag up or down to the new tempo, and across to the ending measure. B&P Pro displays a straight “rubber band” line connecting the beginning and ending points of the tempo change; the title bar of the Tempo Map window shows the endpoint of the tempo change in song-time and the ending tempo.



When you reach the desired endpoint, release the mouse button. B&P Pro draws the tempo change in with the selected curve, and shows the tempo at the end of the change.

Editing a Tempo Change

To open a requester which allows you to edit all aspects of the tempo

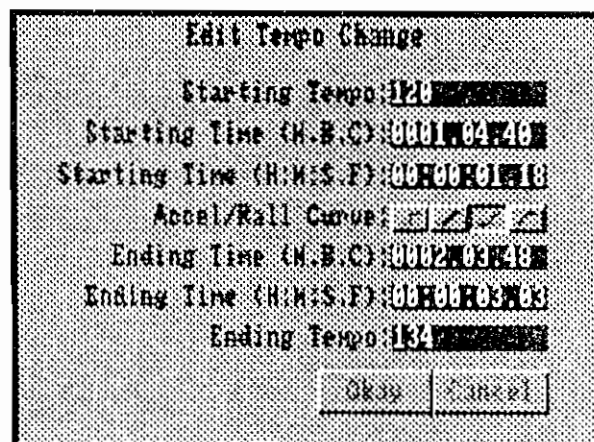


change, select the Magic Wand, then click anywhere along the curve you wish to alter. This opens the Edit Tempo Change requester.

The Edit Tempo Change requester displays seven parameters that describe the tempo change. The parameters are:

STARTING TEMPO: Enter the Starting Tempo in beats per minute. Each Tempo Change starts at one tempo, then accelerates or decelerates to a second tempo, the Ending Tempo. The Starting Tempo of each Tempo Change is the Ending Tempo of the previous Tempo Change. As a result, you need only edit one of these Tempos, not both.

STARTING TIME (M.B.C): Each Tempo Change begins at a specific point in the song. To edit this position in Song-time (Measures, Beats, and Clocks), click on the Starting Time (M.B.C) line and edit it.



REMEMBER: Use the correct punctuation. For example, the time in Measures, Beats, and Clocks must have a period between each of them (for example, 145.03.11). When you select a Tempo Change, B&P Pro displays each field with the correct punctuation. To change a number, click on it and use the Delete and Backspace keys to erase it. (You can also hold down the right Amiga key and press X to erase an entire field at once.) Then, enter the correct number. When you finish, press the Return or Enter key to signal B&P Pro to recalculate the timing. If you enter too little or too much punctuation in a field, you probably won't get what you expected.

STARTING TIME (H:M:S:F): The second Starting Time parameter displays the Starting Time in Hours, Minutes, Seconds, and Frames. You may edit this parameter, but take note: if you edit a Tempo Change which precedes this Tempo Change, the Starting Time for this Tempo Change will change, because the amount of time in hours, minutes, seconds and frames required to reach this point has changed. The Song-time position, however, remains unchanged. Also note that a period and not a colon precedes the last number displayed, to remind you that the number represents frames, which are divisions of a second. Depending on the SMPTE format you selected in the Timing Menu, the maximum frame rate of the last number will be either 24, 25, or 30.

ACCEL/RALL CURVE: The Accelerando/Rallentando Curve includes four options:

*Instant, a sudden change;

*Linear, a change that progresses at a constant rate;

*Logarithmic, a change that starts quickly, then eases into the final tempo; and

*Exponential, a change that starts slowly, then accelerates.

Select a curve by clicking on the desired button.

ENDING TIME (M.B.C): Unless a Tempo Change has an Instant curve, you must specify the duration of the Tempo Change curve. Enter the time in Song-time after the Ending Time (M.B.C): prompt. B&P Pro calculates a Tempo change which occurs gradually between the starting and ending times.

ENDING TIME (H:M:S.F): The second Ending Time parameter displays the Tempo Change ending time in Hours, Minutes, Seconds, and Frames. Edit this field to set the tempo curve ending in SMPTE time.

ENDING TEMPO: Enter the final Tempo in the Ending Tempo: field. B&P Pro plays your composition at this speed by the end of the Tempo Change curve. The song continues at this Tempo until the next Tempo Change occurs.

When you have finished editing the tempo change, click on Okay, to accept the changes, or Cancel, to leave the previous settings intact.

Moving a Tempo Change

To move a tempo change to a new place or time, select the Hand, then press and hold the mouse button over either one of the small black knobs at the ends of the tempo change curve. The curve then becomes a straight line. With the mouse on either end point, stretch the curve up or down to change the starting or ending tempo, and across to change the duration of the curve.



Erasing a Tempo Change

To erase a tempo change, select the Eraser, then click on any part of the tempo change curve. B&P Pro deletes the selected tempo change.



The Tempo Map Menu

The Tempo Map window features its own menu. The Tempo Map menu selections are:

NEW: creates a new Tempo Map, forgetting the current one.

LOAD: loads a Tempo Map from disk. You need to Save a Tempo Map before you can load it.

SAVE: saves a Tempo Map to disk. Saving a Tempo Map makes it available for use with other songs.

CONFORM: creates a tempo change that forces a selected portion of a Song to last for a given amount of time. This is useful for stretching or shrinking a passage to fit within an exact time. When you select Conform, B&P Pro opens the Conform requester.

Enter the Starting Time of the portion you want to conform, in Song Time. B&P Pro automatically adjusts the starting SMPTE time. Then, enter the Ending Time of the portion. (Note that you must enter the SMPTE Ending Time as well; B&P Pro does not adjust it for you.)

B&P Pro then calculates the appropriate tempo change and places it in the Resulting Tempo field. If you approve of the Resulting Tempo, click the Conform button to insert the tempo change into the Tempo Map. Otherwise, click Cancel to return to the Tempo Map or enter new Ending Time values to create a different Resulting Tempo.

UNDO (AU): cancels the last change to the Tempo Map.

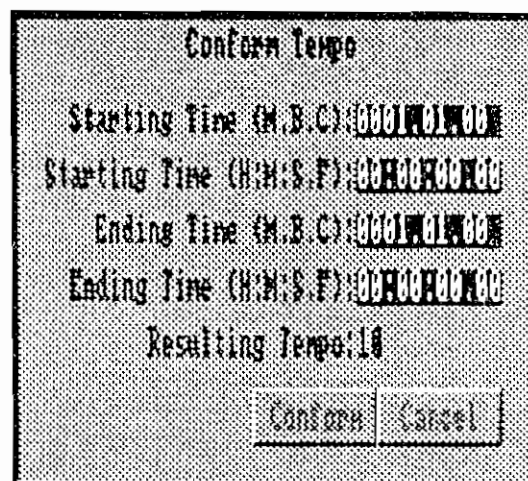
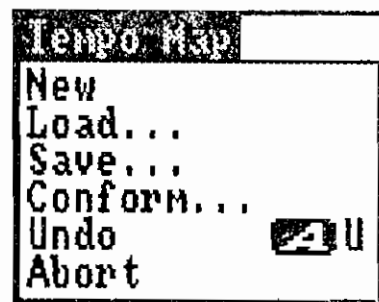
ABORT: restores the Tempo Map to the condition it was in before you opened the Tempo Map window.

Disabling Tempo Changes

If you need to disable tempo changes, open the Timing menu and turn off the Synchronize to Tempo Map selection. B&P Pro then uses the tempo you have set in the Transport Controls window to determine the song tempo.

Time-Line Scoring

When creating a soundtrack for a movie, video, or multimedia production, you often need to synchronize several disjointed sections of music with specific points in the movie. B&P Pro's Time-Line Scoring feature gives you a high-level view of your soundtrack, and allows you easily to position any number of music sections in SMPTE time.



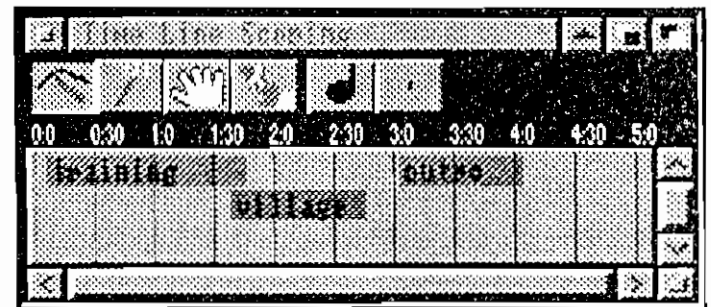
Each of the music sections is actually a full-fledged B&P Pro Song, complete with multiple Tracks and its own Tempo Map. Use the Time-Line Scoring window to load multiple Songs and position them relative to each other. Time-Line Scoring adds each Song's Tracks to the Track list and recomputes the master Tempo Map to include the time period of each Song.

Before you use Time-Line Scoring, you must first create, edit, and save each section as a separate Song. Once you add a song to the Time-Line Scoring window, you can still perform all the standard B&P Pro editing operations on the Song.

To use Time-Line Scoring, create a New song (from the Song menu), and select Time-Line Scoring from the Windows menu or double-click on the Time-Line Scoring icon.



The Time-Line Scoring window has six buttons along the top of the window:



PENCIL: adds a new song to the soundtrack.

MAGIC WAND: changes the beginning point of the selected song.

HAND: moves a song forward or backward in time.

ERASER: deletes a song from the soundtrack.

ZOOM IN/OUT: allows you to zoom in for more precise movements, or zoom out to see more of the soundtrack.

Adding a Song

When you select the Pencil and click in the Time-Line window, B&P Pro opens the File Requester. Select the song you want to include in the soundtrack, and B&P Pro loads the Song and inserts a colored bar in the Time-Line window with the song title inside. Each song has a different color, so that you can easily see where one song ends and another begins.



Specifying a Starting Time

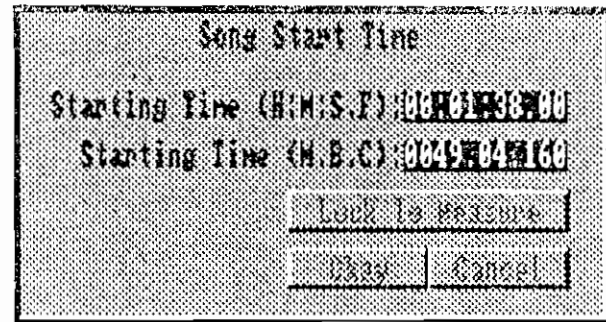
When you select the Magic Wand and click on a song, B&P Pro opens the Song Start Time requester.



This requester contains Starting Time fields for the selected song, in both

SMPTE and Song-time formats. Set the exact position of the Song in SMPTE time by entering the time in the SMPTE Starting Time field. B&P Pro automatically updates the Song Time field to reflect the new SMPTE Starting Time.

Note that Song Time rarely lands on the beginning of a measure. To solve this problem, use the Lock to Measure button. Click on this button and B&P Pro calculates a tempo change and inserts it into the measure immediately before the selected Song. The tempo change adjusts the timing so that the Song starts on an exact measure boundary. The measure number designated by the Starting Time: prompt equals the sum of all measures in the soundtrack up to this point. Tempo changes, Time Signatures, and the SMPTE Global Offset affect the SMPTE starting time of the selected song.)



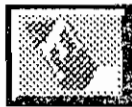
Moving a Song in Time

To reposition a Song in SMPTE time, select the Hand button and use the Hand to move the Song to its new starting time.



Removing a Song from the Time-Line

To remove a Song, select the Eraser button and click on the Song. B&P Pro removes the Tracks associated with the Song, but does not delete the Song from disk.



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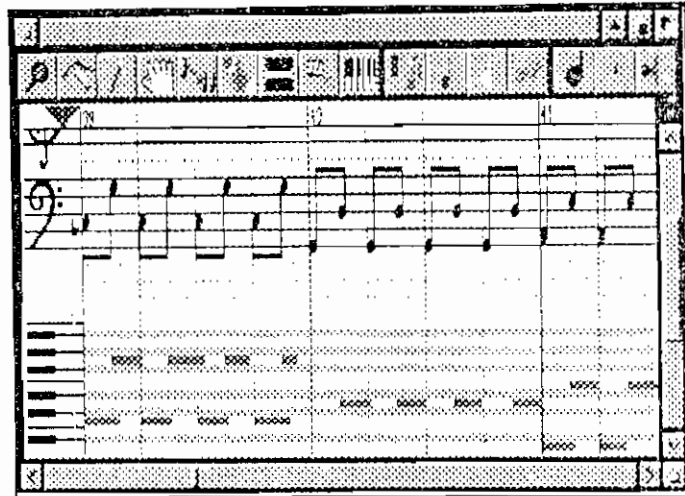
chapter eleven

note editing

B&P Pro's Sequence Editor lets you dig deep into your composition. All of its buttons, menu options and features eliminate guess work and help you fine-tune your music. In fact, the Sequence Editor is so feature-laden that we've divided our discussion of it into several chapters. This chapter covers specifically note entry and editing.

To Open the Sequence Editor, double click on the Track you wish to edit, or select the desired Track and press Return. The Sequence Editor window opens, and displays the selected Track.

The Sequence Display occupies most of the window. It shows your Sequence from left to right. Vertical lines, indicating the beats and measures, provide you with a view of the exact time and place of each note.

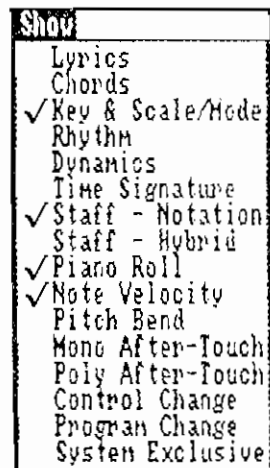


Viewing Your Music

Use the Show menu to determine what options B&P Pro shows in the Sequence Display. By default, B&P Pro displays the Staff - Hybrid, Piano Roll and Velocity Curve, the options most frequently used. You can toggle as many options as you want at once by holding down the right mouse button and clicking the left mouse button over the items you want to toggle.

The Staff - Notation

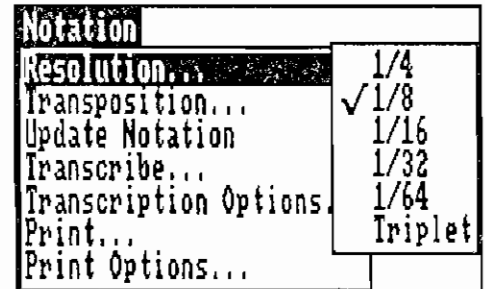
DISPLAYING: When you select Staff-Notation from the Show menu, B&P Pro displays the notes on a traditional treble and bass clef in standard musical format. B&P Pro marks accidentals, those notes which fall outside of the selected key, with sharps and flats. If you haven't defined a key, the Staff defaults to the key of C MAJOR (no standard notes sharpened or flatted).



RESOLUTION: When you select Staff - Notation, B&P Pro creates rests and ties on the fly. B&P Pro uses the duration of each note and the notation resolution to determine what the music looks like. (The notation resolution is the smallest note value [eighth, sixteenth, etc.] that B&P Pro displays.) The Wait requester shows you which measure B&P Pro is notating. Even on an Amiga 500, this is a fast process.

You can control the resolution of the notation by selecting Resolution from the Notation menu and toggling the triplet modifier on and off.

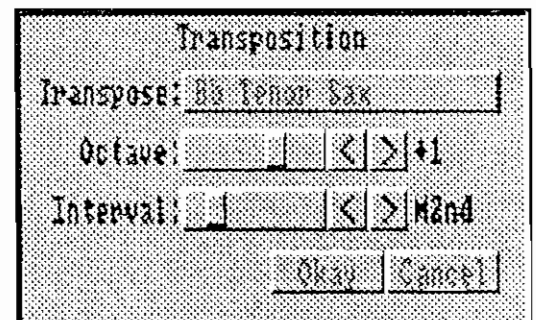
By default, B&P Pro selects an eighth note resolution. Always choose a resolution that corresponds to the shortest note in the Track. Otherwise, B&P Pro displays the note at the selected resolution, which means that shorter notes may run together. On the other hand, if you set the resolution too small, B&P Pro can add unnecessary fractions of notes that muddle the page.



REMEMBER: B&P Pro plays the notes as you have composed them, even if the selected Resolution causes them to display improperly.

TRANSPPOSITION: B&P Pro supports two different key types: Concert Key and Transposed Key. Transposed Key applies to those instruments that require transposition, e.g., Eb Alto Sax or Bb Clarinet. If you select a Transposed Key for a particular Track, you have the option of displaying it either in Concert Key or Transposed Key.

To assign a Transposed Key to a Track, select Transposition... from the Notation menu. This opens the Transposition requester.



Most of the time, you need concern yourself only with the Transpose: button. When you click down on this button, B&P Pro opens a pop-up menu containing a list of all popular instruments.

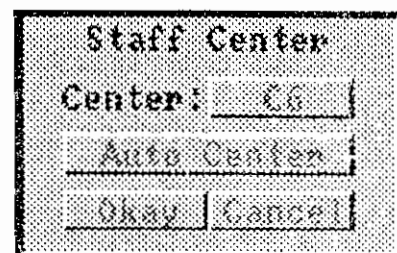
If you are writing for an instrument that is not in the list (e.g., a piccolo trumpet), select Custom from the list. Then adjust the Octave and Interval sliders to the desired transposition. The Octave slider steps the transposition by octaves; the Interval slider controls the interval within an octave, e.g., a major third or minor sixth. You can also alter any of the instrument presets in the list.



To switch the display of a Track to Concert or Transposition Key, select Notation... from the Display Options menu.

UPDATING: In certain situations, typically after a lot of editing, the Notation display may contain a few errors. To refresh the Notation display, use the Update Notation command found in the Notation menu. B&P Pro will recalculate and redisplay the Track's Notation Staff.

CENTERING: The center of the Staff - Notation defaults to middle C, octave five on the MIDI keyboard. To change to another octave, use the Note Range... Staff Center command in the Display Options Menu. The Staff Center requester opens.



In the box to the right of Center: the requester displays the note currently at the center of the Staff. By default, the Staff centers around C5, the note C of the fifth octave. To change the octave, click on the center note and hold the mouse down. Under the mouse, a pop-up menu appears with a choice of octaves. Move the mouse to the one that you want and lift up. The center note changes to C of the octave you choose. If you don't feel like doing any guess-work, click on the Auto Center button, which automatically calculates the center note and accommodates the range of notes displayed. When you finish, press Okay to accept the new Staff Center, or Cancel, to leave it as it was.

The Staff - Hybrid

DISPLAYING: When you select Staff-Hybrid from the Show menu, B&P Pro displays notes as horizontal bars on a traditional treble and bass clef. The length of the bar reflects the length of each note. As in the case of Staff - Notation, B&P Pro marks accidentals with sharps and flats. If you haven't defined a key, the Staff defaults to the key of C MAJOR. This staff displays instantly.

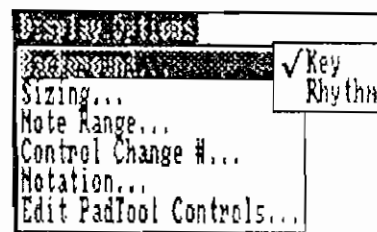
You can show both Notation and Hybrid Staves at the same time, if you like.

CENTERING: The center of the Staff - Hybrid defaults to middle C, octave five on the MIDI keyboard. To change to another octave, use the Note Range... Staff Center command in the Display Options Menu. The Staff Center requester opens. (See graphic above.)

In the box to the right of "Center," the requester displays the note currently at the center of the Staff. By default, the Staff centers around C5, the note C of the fifth octave. To change the octave, click on the center note and hold the mouse down. Under the mouse, a pop-up menu appears with a choice of octaves. Move the mouse to the one you want and lift up. The center note changes to C of the octave you choose. If you don't feel like doing any guess-work, click on the Auto Center button, which automatically calculates the center note and accommodates the range of notes displayed. When you finish, press Okay, to accept the new Staff Center, or Cancel, to leave it as it was.

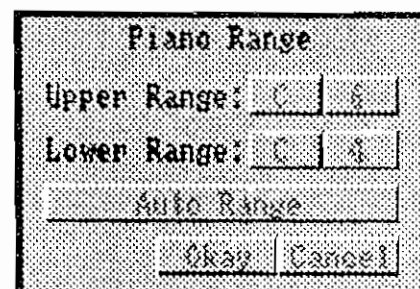
The Piano Roll

DISPLAYING: When you select the Piano Roll, B&P Pro displays your MIDI note events as horizontal bars on a graph which extends from a column of piano keys on the left. As with the Staff, notes are blue. If you select the Background... Key option in the Display Options menu, the spaces on the graph that make up the current key are displayed behind the notes in a faded purple color.



CENTERING: At times, the Piano Roll may display too much or too little of your composition. A Note Event can span a range of 128 notes, just over ten octaves. The Piano Roll can show all or any section of that ten-octave keyboard. Since an individual Sequence rarely ranges more than two octaves, B&P shows two octaves by default. To change the range of notes displayed, select the Piano Roll Bounds command, which opens the Piano Roll Bounds requester.

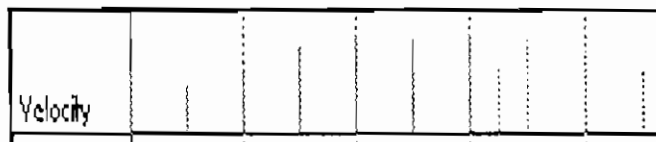
You can set two variables: the Upper Range and the Lower Range. Respectively, these denote the highest and lowest keys displayed on the Piano Roll. The Piano Roll will not display notes above the Upper Range nor below the Lower Range. Define each boundary by the specific note and octave. To select the note, click on the note letter, in this example, A#. A pop-up menu of a piano keyboard appears under the mouse. Drag the mouse to the note of choice and lift up. To set the octave, click on the octave number, in this case, 5, and a pop-up menu of octave choices appears under the mouse. Select the octave and lift up on the mouse.



The Auto Range button automatically sets the upper and lower boundaries of your sequence. To accept the new Piano Roll bounds, click on Okay. To return to the Sequence Editor window without any changes, select Cancel.

The Velocity Curve

When you select the Velocity Curve, B&P Pro draws the velocity of each note as a vertical line. The greater the velocity, the higher the line. Since most synthesizers translate velocity directly to loudness, consider the velocity curve as a volume

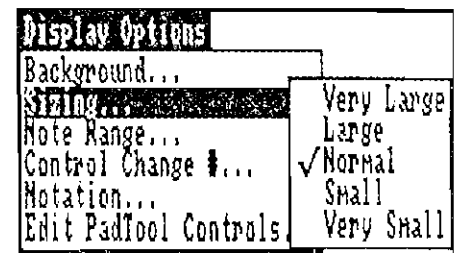


curve. If your keyboard supports velocity, then the harder you strike the keys, the louder the instrument will play. Note that even if your MIDI device doesn't transmit velocity, it may still be capable of receiving it. A number of drum machines and synthesizers that don't respond to velocity when you play them directly, will nevertheless respond to velocity when they receive

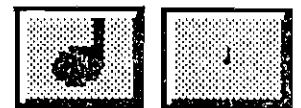
the notes from B&P Pro.

Sizing

The Sizing... option of the Display Options menu gives you five choices for displaying data: Very Large, Large, Normal, Small and Very Small. If you choose Very Large, you can do very fine work with the timing of your notes. On the other hand, the lowest resolution, Very Small, is the same as the resolution in the Main Screen. At this resolution, you gain a much better feel for how your song progresses. Fine tuning, however, is a bit more difficult.



You can also use the Zoom In and Zoom Out buttons to enlarge or reduce the display size. Click the Zoom In button to select the next larger size, up to Very Large. Click the Zoom Out button to select the next smaller size, down to Very Small.



Hearing the Notes

If you select the Play Notes item in the Preferences menu, every time you enter, drag, or Toolize a note, you will hear it. B&P Pro sends the note from the Sequence Editor out through the Post-Recording side of the Track's PipeLine. If this option is not selected, the editing process will be silent.

To listen to the portion of your song displayed in the editor window, click the Speaker button. You can use the Sizing option or the Zoom In/Zoom Out buttons to control how much of your song B&P Pro plays.



Editing with the Mouse



Across the top of the Sequence Editor window sits a row of buttons. Think of these as a palette of options. By clicking on these, you select the manner in which you use the mouse to draw, erase, drag, and alter your music.

The buttons belong to three groups: the first nine buttons from the left, the Command buttons, determine how you use the mouse. The middle four buttons, the Default Note buttons, define the current note resolution for entering and editing. On the right lie the Zoom and Speaker buttons, which we have already discussed. (See preceding section.)

The Command Buttons

The first nine buttons from the left are the Command Buttons. As you click each one with the mouse, the mouse's icon changes. Most of these buttons have keyboard equivalents as well. Set the Command Buttons to determine how you use the mouse. The following list describes each button briefly. Later in this chapter, we'll delve into greater detail:

THE MAGNIFYING GLASS: function key "F1," displays information about notes you touch with the mouse.

THE PENCIL: function key "F2," draws notes either into a Staff or the Piano Roll.

THE MAGIC WAND: function key "F3," alters the length and velocity of notes by dragging the mouse through them.

THE HAND: function key "F4," grabs and drags notes.

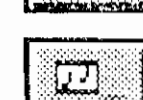
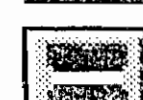
THE DUPLICATOR: function key "F5," makes an exact copy of the selected note and drags the copy to a new position.

THE ERASER: function key "F6," deletes notes.

THE TOOLPAD: contains selected Tools and processes notes with the currently-displayed Tool.

THE BOUNDING BOX: working in conjunction with the Hand, Duplicator, Eraser, and ToolPad buttons, enables you to draw a rectangle around a set of notes and then Drag, Duplicate, Erase, or Toolize them.

THE STEP ENTRY: enables step entry of notes from a MIDI keyboard. This button enables you to enter notes and their durations at your own pace, without having to play your instrument keyboard in real-time.



Setting the Default Note

Before drawing, dragging, or step-entering notes, you must set the Default Note. The Default Note consists of a note value (eighth, quarter, etc.), a modifier (triplet, dotted, normal), an articulation (staccato, legato, etc.), and a dynamic level (pp through ff). The middle group of four buttons sets these standards. Upon being pressed with the mouse, each button reveals a pop-up menu with the options displayed. Drag the mouse to the desired option and lift up to select it. B&P Pro displays your choice on the appropriate button.

NOTE VALUE: The first button determines the currently selected note division. Your choices range from a whole note to a sixty-fourth note. Select your choice from the menu by dragging the mouse to the desired choice, pressing function key "F7" to decrease the note value, or pressing SHIFT and function key "F7" to increase the note value.



NOTE MODIFIER: The second button modifies your selected note value. The first item in this menu, a triplet, shrinks the size of the note to two-thirds its note value. Mathematically, this may seem odd. An explanation: in musical notation, a triplet is formed by fitting three notes of equal value into the space of two. For example, it takes three eighth note triplets to equal a quarter note, rather than two "normal" eighth notes.



The second menu option, a "normal" note, leaves the selected note value as is. The third option, the dotted note, adds half of the note to the selected note's length. In other words, B&P Pro multiplies the note value by one and one-half.

Select your choice by dragging the mouse to the desired choice, pressing function key "F8" to select the next note modifier, or pressing SHIFT and function key "F8" to select the previous modifier.

ARTICULATION: This button determines the relative length of the selected note. The menu range extends from staccato (short) to legato (slurred). Staccato, signified traditionally as a dot above a note, usually indicates a duration of 1/4 its full length value; Portato, signified traditionally by the absence of a marking above the note, indicates a note duration of 1/2 its full length value; Leggerio, traditionally signified as a horizontal line above a note, indicates a note duration of 3/4 its full note value; and Legato, traditionally signified with an arched line above a series of notes, indicates a note duration equal to its full value, with no perceptible space between each note.



Make your selection by dragging the mouse to the desired choice, pressing function key "F9" to make the articulation longer in duration, or pressing SHIFT and function key "F9" to make the duration shorter.

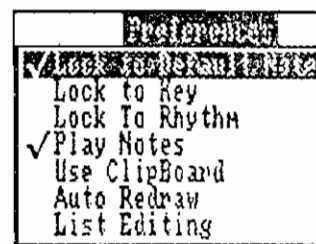
VOLUME: The final button determines the dynamics, or loudness and softness, of the note. This translates directly into MIDI note velocity. You have six choices ranging from very soft to very loud. Make your selection by dragging the mouse to the desired choice, pressing function key "F10" to increase a note's volume, or pressing SHIFT and "F10" to decrease its volume.



If you're familiar with classical notation, you will recognize these markings as the following lower case letters: "pp," "p," "mp," "mf," "f," and "ff." These abbreviations stand for pianissimo (very soft), piano (soft), mezzo piano (medium soft), mezzo forte (medium loud), forte (loud) and fortissimo (very loud), respectively. Without dynamic road signs, music sounds stagnant and lifeless. The proper use of dynamics focuses attention on and away

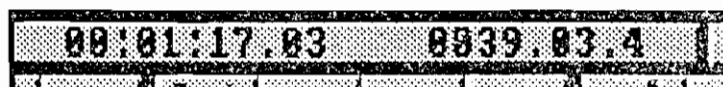
from various segments of a piece. Ironically, sometimes a quiet section of music is easier to hear than a loud one.

Before you can draw or drag notes, you must set the Default Note. This determines the spacing between notes that you enter. In addition, if you select the Lock to Default Note item in the Preferences Menu, the Default Note determines the intervals that the notes step when you drag them.



The Title Bar

The Title Bar in the Sequence Editor window displays numbers to assist you when editing. In most cases,



the following holds true: B&P Pro displays the SMPTE time in which the selected event occurs. More specifically, the number is displayed as hour(s): minute(s): second(s). frame(s). To the right of the SMPTE time, B&P Pro displays the Song-time of the selected event. This translates into measure(s).beat(s).clock(s).

Two exceptions exist, however. The first is when dragging with the Bounding Box. In this situation, B&P Pro shows the distance traveled from your starting point in Song-time. The second exception occurs when you alter a note's length with the Magic Wand, in which case, B&P Pro shows the note's length in Song-time.

Entering Notes

Activate the Pencil by clicking on the Pencil Button or pressing function key "F2." Then, click the Pencil on the display to enter notes defined by the Default Note. If you hold down the mouse, the Pencil becomes the Hand so that you can drag the note. Lift up on the mouse button when you are satisfied with the note's position. If you select the quarter note as your Default Note, B&P Pro draws quarter notes wherever you click and drag. You can draw a string of notes by continuously clicking the mouse as you move it. The length and velocity of each note are determined by the current setting of the Articulation and Volume buttons.



REMEMBER: To refresh the display after entering notes, press the Return or Enter keys on your Amiga keyboard. If you have selected "Auto Redraw" from the Preferences Menu, the display will refresh automatically and you will not have to press the Return or Enter keys.

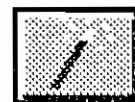
STAVES: If you have a Key & Scale/Mode selected, the Pencil automatically places the notes in key. The Articulation button determines the length of each note and the Volume button determines the Velocity.

PIANO ROLL: You can only enter notes within the range of the Piano Roll. To change the range, go to the Note Range... command in the Display Options Menu.

VELOCITY: To alter the existing velocities, drag the Magic Wand over them. You can only enter note events in either Staff or the Piano Roll.

Altering Note Lengths and Velocities

Once you enter Notes, you may need to edit them by changing their lengths and velocities. To the right of the Pencil sits the Magic Wand. Select this button to alter the data with the mouse, either by clicking on it or by pressing function key "F3."



STAFF-NOTATION: Use the Magic Wand to conform notes to the current Default Note. Click on any note; the Editor automatically changes the note length to that of the Default Note.

STAFF-HYBRID: Use the Magic Wand to alter the length of individual notes. Press down on the mouse button over a note; the Editor highlights the note in red. Drag to the left to make the note shorter or to the right to make the note longer. To edit several notes in a chord in one fell swoop, edit the first note in the "stack," then drag the mouse vertically through the remaining notes. All remaining notes conform to the size of the first one you edited.

PIANO ROLL: Use the Magic Wand to edit the length of each note. Drag the mouse into a note and notice that the note is highlighted. As you move the mouse to the right, the note extends. When you move it to the left, the note contracts. To edit several notes in a chord in one fell swoop, edit the first note in the "stack," then drag the mouse vertically through the remaining notes. All remaining notes conform to the size of the first one you edited.

VELOCITY: Drag the Magic Wand over the Velocity lines to change them. In this way, you can change their individual volume levels. As an option, use the Up and Down Arrow keys to increase and decrease a note's velocity, respectively.

As an option, use the Left and Right Arrow keys to decrease and increase, respectively, a note's length. This works with either Staff, as well as with the Piano Roll.

Dragging Notes

When you select the Hand button, either with the mouse or function key "F4," the

mouse icon becomes a hand with one finger extending. Use this to drag and reposition notes.



If you set the Lock to Default Note option in the Preferences menu, the note you grab moves to a grid defined by the Default Note. For instance, if the Default Note is a quarter note, every note you drag moves left or right at quarter note intervals. Dragging notes left and right moves them forward and backward in time. Dragging them up and down changes their position on either Staff or the Piano Roll, thereby changing their pitch. If you have a MIDI instrument at the output channel number for this track (set in the Tracks window), B&P Pro plays the note on the instrument as you drag the note, if you have "Play Notes" from the Preferences Menu selected.

Optionally, you may use the Left and Right Arrow keys to move the note left or right on the Default Note grid and the Up and Down arrow keys to increase or decrease the pitch. When you use the Shift key in conjunction with the Up and Down arrow keys, the note shifts its pitch by an additional octave.

IMPORTANT: To refresh the display after entering notes, press the Return or Enter keys on your Amiga keyboard. If you have selected "Auto Redraw" from the Preferences Menu, the display will refresh automatically and you will not have to press the Return or Enter keys.

Duplicating Notes

To duplicate notes, click on the Duplicator button. When you click and drag a note, B&P Pro creates a new note of the same type and places it at the destination.



Erasing Notes

To use the mouse to erase Notes, choose the Eraser button, either by clicking on this button or pressing "F5." In selecting this button, the mouse icon becomes a pencil with the eraser end pointing down and to the left. To delete notes, click down and drag the eraser over the Notes.



The ToolPad

The Sequence Editor Window contains a ToolPad, just as the Tracks window does. In it, you place Tools, which then can process, or Toolize, your music. The ToolPad holds up to sixteen Tools. This ToolPad contains a set of Tools identical to that in the Tracks window ToolPad. In other words, all ToolPads, including those in other Sequence Editor Windows, share the same Tools. A Tool placed in one is accessible to all the others.



PLACING: To place a Tool in the ToolPad, drag it from the ToolBox to the ToolPad. You can place Branching, Merge, and other pipe routing tools in the ToolPad, but they have no effect on your music. If sixteen Tools occupy the ToolPad already, the new Tool replaces the currently displayed one.

SELECTING: To select the Toolizer button, click on it once, which highlights it in yellow. The Toolizer can also be accessed by pressing "F6." The mouse now becomes a wrench with a note in its mouth.

To select a Tool in the ToolPad, click on the ToolPad a second time, while holding the mouse down. A menu of sixteen Tools appears under the mouse. Select the one you want by moving the pointer to it and lifting up.

EDITING: To edit the parameters of the Tool currently displayed in the ToolPad, select Edit PadTool Controls... from the Display Options Window or press down the SHIFT key and click on the ToolPad. The Control window for the selected Tool opens, if such a window exists. There you can set the variables determining the Tool's behavior. For example, with the Flip Tool, you can set the Flip Axis. It isn't necessary to close a Control Window. In this manner, you can continue to make adjustments while you use the Tool.

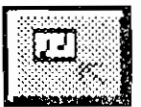
TOOLIZING: Tools work in three ways in the Sequence Editor. You can process all notes between the Edit Flags; you can process all notes within the Bounding Box (see the next section); or you can touch notes with the wrench, which affects them individually. Once you select the ToolPad, the Tool processes any notes you touch with the wrench. Just drag the wrench through the notes to affect them immediately.

Although Toolizing individual notes may appear somewhat peculiar at first, it's an extremely useful feature. Tools can quantize, transpose, modulate, filter, echo, invert, and do much more on a note-by-note basis.

In order to process all notes between the Edit Flags with the currently selected Tool in the ToolPad, you must select "Toolize" from the Edit Menu.

Drawing a Box

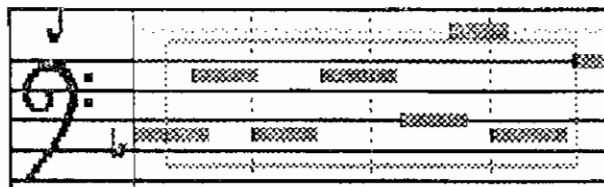
Some of the Command buttons can be selected in conjunction with the Bounding Box button. With the Bounding Box, you can draw a box around a group of notes, affecting them together.



To draw the box, click down where you'd like one corner of the box to be and drag the mouse to the opposite corner. A box grows as your mouse travels. The box does not cross the boundary between the Piano Roll and either Staff. For example, if you're drawing a box around notes in the Piano Roll and you move the mouse up to the Hybrid Staff, the box stops at the boundary between the two. Once you have enclosed what you want in the box, lift up

on the mouse.

Depending on which Command button you select in conjunction with the Box, here's what happens:



THE HAND BUTTON: (function key "F4") You can drag everything in the box with the mouse. Once you create the box, click down on the box again and drag it. Everything in the box moves with the mouse.

THE DUPLICATOR BUTTON: B&P Pro duplicates all notes inside the box. When you create the box, click down on the box again and drag it. A copy of the notes moves with the mouse.

THE ERASER BUTTON: (function key "F5") When you lift up on the mouse, every note within the box is erased.

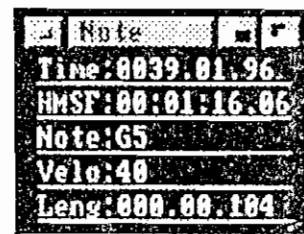
THE TOOLIZER: (function key "F6") All notes within the box are processed by the currently selected Tool in the ToolPad.

The Magnifying Glass

When you select the Magnify button, either by clicking on it or using function key "F1," the Magnify Window opens. This window displays all of the properties of any note that you touch with the mouse and lets you edit them. Use the Left and Right Arrow keys to move from note to note. Use the Up and Down arrow keys to move through all of the MIDI events in chronological order.



TIME: The first field in the Magnify Window, "Time," indicates the time in measures, beats, and clocks of the note. The second field, "HMSF," indicates the time in SMPTE format (Hours, Minutes, Seconds, Frames). To change the time, click on either line with the mouse and type in a new time. Press the Return key to indicate that you've finished and the note will jump to the new time.



NOTE INFORMATION: Three information fields, "Note," "Velo," and "Leng," follow. The first indicates the note value as a key and octave, e.g., "A3," for A in the third octave. The second indicates the velocity, how hard you played the note. Often, this translates to note volume. The last field, "Leng," denotes the length of the note in measures, beats, and clocks.

REMEMBER: Press the Return or Enter keys on your Amiga keyboard after you change a line to confirm the change.

Step Entry

Step Entry means that you can enter notes and their durations directly into the Sequence Editor from your MIDI keyboard, at your own pace and without having to play your MIDI keyboard in real-time. To do so, select the Step Entry button. The mouse icon becomes a picture of a person's leg on a step.



REMEMBER: Before Step-Entering, make sure of the following:

- * The notes you play come down the PipeLine of the Track you are currently editing. Any Tools in that Input PipeLine process the notes you are Step-Entering. For example, if a CounterPoint Tool resides in your Input PipeLine, a Counter Melody accompanies all notes you Step-Enter. You may or may not find this result desirable. To temporarily disable the offending Tools, move them to the right side of the track for the time being. Do this by selecting them and pressing the right arrow key on your Amiga keyboard. Remember to return them to the Input PipeLine when you're finished Step-Entering.

- * Step Entry starts at the left Edit Flag. Click with the mouse at the point where Step Entry should begin. The left Edit Flag will automatically snap into place, marking the starting point for Step Entry.



- * Step-Entered notes use the Default Note and Articulation.

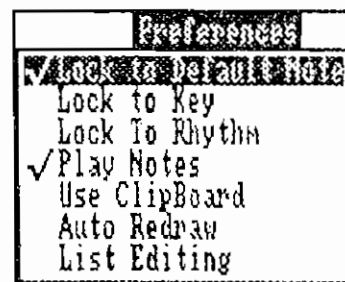
STEP-ENTERING: To Step-Enter single notes, play them one by one. After you lift up on each one, the cursor moves forward. To enter a chord, hold down each member note, lifting them all up at once. Several keyboard commands come into play when step-entering:

To enter a rest, press the Space Bar.

To back up a step, press the Backspace key.

"Lock to" Preferences

B&P Pro provides a variety of "Lock to" preferences, found in the Preferences Menu of the Sequence Editor window. These can be used when entering and/or dragging notes. The Lock to Default Note option allows movement only on the Default Note interval when entering or dragging notes. For instance, if your Default Note is an eighth note, then all notes you drag will move across the screen at eighth note increments. The Lock to Key option allows you to enter or drag notes within the selected key only. (See Chapter 13.) If you haven't yet chosen a key, B&P Pro defaults to the key of C Major. The Lock to Rhythm option conforms all entered or dragged notes to the current



rhythm template. (See Chapter 13.)

Printing Notation

See the Staff - Notation section at the beginning of this chapter for an introduction about using the Notation menu. In addition to the items mentioned previously, four additional options exist:

TRANSCRIBE...ALL: When you select this option, B&P Pro recomputes all notation for a Track, as if the program were notating for the first time.

TRANSCRIBE...BETWEEN FLAGS: When you select this option, B&P Pro recomputes all notation found between the Edit Flags.

TRANSCRIPTION OPTIONS...OVERLAP NOTES: When you select this option, the Transcribe command handles overlapping notes by creating tied notes. Otherwise, it chops off the first note before starting the second.

TRANSCRIPTION OPTIONS...EXTEND NOTES: When you select this option, the Transcribe command extends each note to the next note or beat, whichever comes first.

For further information about printing your music, please see Chapter 19, Printing Notation.

chapter twelve

midi events

Notes aren't the only MIDI Events you can record, edit and play. B&P Pro lets you work with all MIDI channelized events, which include Pitch Bend, Program Change, Control Change, and more. In this chapter, we'll show you how to enter and edit these special MIDI Events.

Defining MIDI Events

When information is sent through a MIDI cable, it's broken into individual commands that describe specific actions. These commands are commonly called "MIDI messages," or "MIDI events."

With B&P Pro, you can record, play and edit all of the MIDI-channelized voice events. These encompass all the commands that control how your synthesizer(s) can play: what notes to play, how loud to play them, how much pitch bend to include, etc. The MIDI-channelized voice events embody the actual performance. Additionally, you can record, play and edit MIDI System Exclusive events. Let's look at each:

Note On and Note Off

Note On and Note Off are by far the most important MIDI events. They describe when a note starts to play and when it ceases to do so. From a MIDI perspective, Note On and Note Off are separate entities. When you press a key on your MIDI keyboard, it immediately sends a MIDI Note On event which states that the note is playing. Your MIDI keyboard has no way of knowing however, how long you'll sustain that note. Not until you lift your finger off the keyboard does it send a MIDI Note Off event. As you see, the performance of a note is described by MIDI as two separate occurrences.

In traditional music, a note is considered one event, not two. B&P Pro's Sequencer combines Note On and Note Off to create one event that includes both when the note starts and its duration. Even so, it's useful to remember that a note is broken into two parts when it leaves your keyboard, zings across MIDI to your Amiga, flows down a PipeLine, enters the Sequencer and combines into one. Upon playback, it is once again broken into two parts, which flow down the right side of the PipeLine, out through MIDI, and into your synthesizer.

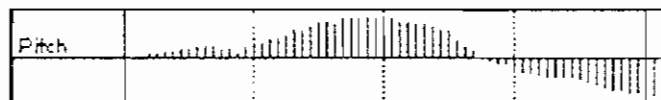
In addition to the actual value of the note, the MIDI Note On event also stores the note's velocity, i.e., how hard you strike the key to produce the note. Note Velocity translates into note emphasis or volume. To view and edit MIDI note events, please see the preceding chapter.

Pitch Bend

Pitch Bend allows the performer to bend the pitch of a note. Since bending a note is an extremely powerful form of musical expression, almost all MIDI instruments provide it, usually with a Pitch Bend Wheel. The MIDI Pitch Bend event states how far out of pitch all notes should be shifted at a specified point in time.

The MIDI Pitch Bend event can be confusing. While it states how far between two extremes the pitch should be shifted, it has no knowledge of the boundaries of those extremes. It does not explicitly state, "Shift all notes up a half step." Instead, it says, "Shift all notes up one eighth of the maximum distance by which you shift." The synthesizer produces the shifting pitch that decides how to interpret the bend. You can set the range on most synthesizers between one half step and a full octave for the Pitch Bend extremes.

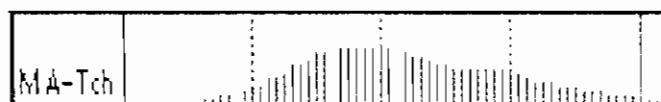
B&P Pro draws each MIDI Pitch Bend event as a vertical line stemming from a central axis. If the pitch bend is positive, or sharp, the line extends up from the axis. If the pitch bend is negative, or flat, the line drops down. Although you may think of a pitch bend over time as a continuous curve, in MIDI terms it's a series of individual Pitch Bend events, which is why the resulting display looks more like a picket fence, the tops of which describe the steps of the curve, than a graceful winding line.



Mono After-Touch

Mono After-Touch measures how hard you press a key on a MIDI keyboard. The changing pressure is converted into numeric values which are constantly sent down the MIDI link. When these describe the overall pressure on the keyboard, as opposed to individual key pressure, they are Mono After-Touch events. Just how the key pressure is interpreted is completely up to the performing synthesizer. Two typical uses are vibrato and volume control.

B&P Pro draws each MIDI Mono After-Touch event as a vertical line. The greater the key pressure, the higher the line.



Poly After-Touch

Poly After-Touch transmits key pressure on an individual key basis. Poly After-Touch MIDI events specify both the key being pressed and its current pressure. Unfortunately, since the hardware to do this is expensive, not many keyboards feature it. For the machines that do support it, Poly After-Touch can be used to describe note emphasis on a continually changing basis.

B&P Pro displays Poly After-Touch events in the same way that it displays Mono After-Touch events: with a vertical line denoting pressure, however, since these

events also specify which note each After-Touch influences, you can specify the range of notes as well. Do this by setting the Piano Roll note range with the Note Range command in the Display Option Menu. All notes displayed in the Piano Roll have their After-Touch values displayed; all others do not.

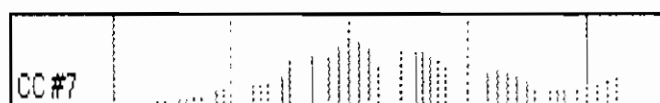


Control Change

Control Change handles many different continuous controllers. Continuous controllers are hardware devices such as volume pedals, breath controllers, and modulation wheels. Every time you alter the position of one of these devices, the device sends a MIDI event reflecting the new value. These events are called MIDI Control Change events. The receiving synthesizer interprets this information to generate vibrato, change the timbre of a sound, or adjust the volume. In fact, no limit exists on the scope of sound-producing parameters that can be controlled with these events. In order to support multiple controllers, the Control Change event carries two pieces of data, an identifier that specifies a controller, and the controller data itself. The identifier, called the Control Change Number, can range from 0 to 121. For example, most synthesizers use Control Change #1 to set the Modulation Wheel and Control Change #7 to set the Volume Pedal. The data, the actual position of the wheel, pedal or other controller, is a number between 0 and 127.

Since 122 different Control Change numbers exist, you can't see them all at once. For example, if B&P Pro were simultaneously to display a rising Volume

Pedal event and a decreasing Modulation Wheel event, it would be impossible to make sense of the resulting mixture, much less edit it with the mouse. B&P Pro shows, therefore, only one Control Change type at a time. To select which Controller you'd like to view and edit, use the Control Change # option in the Display Options Menu.



Program Change

Program Change tells your synthesizer what sound, or "patch," to use when playing

notes. This event holds a number, from 0 to 127, which identifies which patch to use. For example, on your synthesizer, patch #2 could be a violin, patch #45, a marimba. If your synthesizer receives a Program Change event with patch #2, it plays the violin. Later, if it receives a Program Change with patch #45, it switches to a marimba. Most synthesizers can switch between sounds instantly. It is possible, therefore, to embed Program Change events in your sequence that switch among several voices on the same synthesizer as it plays your piece of music. Embedding such Program Change events is a great way of squeezing more performance out of your available hardware. Unfortunately, no correlation exists between Program Change patch IDs and specific sounds. Patch #2 may be a violin on one synthesizer and a dog bark on another.

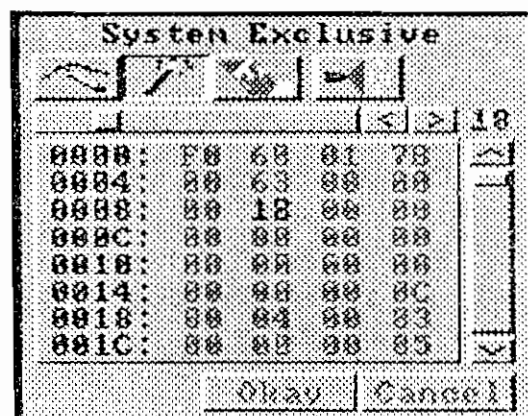
B&P Pro displays Program Change events as numbers, 0 through 127. These numbers indicate to which patch the synthesizer should switch when receiving the event.

Program	4	:	:	43
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System Exclusive

System Exclusive events, as the name implies, are special commands unique to the instrument (or product line). Manufacturers use System Exclusive events, for example, to set pitch bend ranges, transpose keys, send new patch data to the instrument, and many other functions. The user's manual for your instrument can tell you whether your instrument supports System Exclusive events, and what they do.

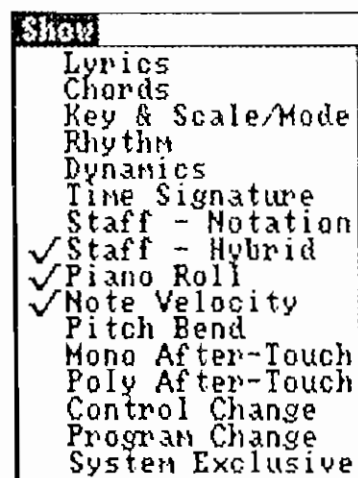
B&P Pro displays the first four bytes of a System Exclusive event in the strip. Entering new events (with the Pencil) or editing existing events (with the Wand) opens the System Exclusive requester, described at the end of this chapter.



Editing MIDI Events

To open the Sequence Editor, double click on the Track you wish to edit. The Sequence Editor window opens, displaying your selected Track, starting with the measure you clicked on. Depending on which MIDI Events you wish to edit, it may or may not display all of the appropriate data. To select the Events you'd like to edit, check them off in the Show Menu of the Sequence Editor.

You can toggle several options at once by holding down the right mouse button and pressing the left mouse button over each option you want to toggle. This feature can be a big timesaver,



especially if you're changing five or six options.

The Command Buttons

The first eight buttons from the left are the Command Buttons. As you click each one with the mouse, the mouse's icon changes. Most of these buttons have keyboard equivalents as well. Set the Command Buttons to determine how you use the mouse. The following list describes each button briefly. Later in this chapter, we'll delve into greater detail.

THE MAGNIFYING GLASS: function key "F1," displays information about MIDI Events you touch with the mouse.



THE PENCIL: function key "F2," draws MIDI Events into a Staff or Piano Roll.



THE MAGIC WAND: function key "F3," alters the values of MIDI Events by dragging the mouse through them.



THE HAND: function key "F4," grabs and drags MIDI Events.



THE DUPLICATOR: The Duplicator creates an exact duplicate of the selected MIDI event.



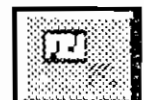
THE ERASER: function key "F5," deletes MIDI Events.



THE TOOLPAD: functions key "F6," allows you to process MIDI events with certain Tools. See "The ToolPad," later in this chapter, for more details.



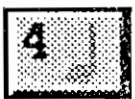
THE BOUNDING BOX: working in conjunction with the Hand, Duplicator, Eraser, and ToolPad buttons, enables you to draw a rectangle around a set of events and then move, duplicate, delete, or toolize them.



Setting the Default Note

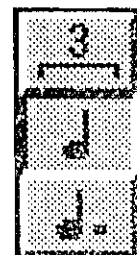
Before drawing or dragging events, you must set the Default Note. The Default Note consists of a note value (eighth, quarter, etc.), a modifier (triplet, dotted, or normal), an articulation (staccato, legato, etc.), and a dynamic level (pp through ff). Four separate buttons set these standards. Upon pressing them with the mouse, each button reveals a pop-up menu with the options displayed. Drag the mouse to the desired option and lift up to select it. B&P Pro displays your choice on the appropriate button.

NOTE VALUE: determines the current time division for event editing. Your choices range from a whole note to a sixty-fourth note. Select your choice



from the menu by dragging the mouse to the desired choice, pressing function key “F7” to decrease the note value, or pressing SHIFT and function key “F7” to increase the note value. For editing MIDI events, the sixty-fourth note gives you the finest control.

NOTE MODIFIER: modifies your selected note value. The first item in this menu, a triplet, shrinks the size of the note to two-thirds its note value. The second item, a “normal” note, leaves the selected note value as is. The third item, the dotted note, adds half of the note to the selected note’s length. In other words, B&P Pro multiplies the note value by one and one-half. Select your choice by dragging the mouse to the desired choice, pressing function key “F8” to select the next note modifier, or pressing SHIFT and function key “F8” to select the previous modifier.



Before you can draw or drag MIDI Events, you must set the Default Note Value and Note Modifier. These determine the spacing between Events that you enter. In addition, if you set the Lock to Default Note in the Preferences Menu, the Default Note determines the intervals between the events when you drag them. Click on these buttons and hold down. Pop-up menus appear, and you can make your selections.

The Title Bar

The Title Bar in the Sequence Editor window displays numbers to assist you when editing. In most cases, the following holds true: The left-hand



number is the SMPTE time in which the selected event occurs. More specifically, the format is hour(s):minute(s):second(s).frame(s). To the right of the SMPTE time, B&P Pro displays the Song-time of the selected event. This translates into measure(s). beat(s). clock(s).

EXCEPTION: When you drag with the Bounding Box., B&P Pro shows the distance traveled from your starting point in Song-time.

Entering MIDI Events

Click on the Pencil button, which highlights it. Notice that the mouse resembles a pencil. You can now use the mouse to enter MIDI Events into your sequence. Enter events by clicking down with the mouse where you want the first Event. Then drag it across the display to enter a trail of Events.



Here is what happens when you draw in each MIDI Event type:

PITCH BEND: To enter a Pitch Bend curve, click down with the Pencil where you’d like it to start and drag it to the right. Set the height of each Pitch Bend Event by the vertical position of the mouse. The current Default Note determines the distance between each Pitch

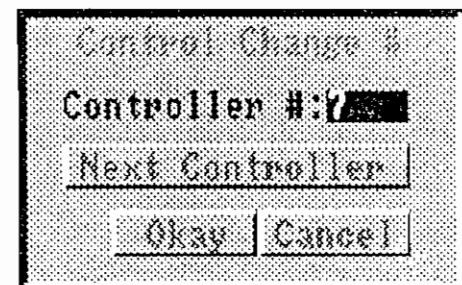
Bend Event. If you'd like many Events close together for high resolution, select a small Note Value. Sixty-fourth note resolution works very well.

MONO AFTER-TOUCH: To enter a Mono After-Touch curve, click down with the Pencil and drag it to the right. Remember that the Default Note determines the distance between each Event.

POLY AFTER-TOUCH: Drawing in the Poly After-Touch curve is a bit complex because each Poly After-Touch Event corresponds to a particular note. That event, therefore, is defined by both its Poly After-Touch information and its pitch, denoted as a letter and an octave number, such as C5. As you draw the curve with the Pencil, two factors govern which note corresponds with which Event. First, B&P Pro includes only notes within the range of the Piano Roll. Second, B&P Pro chooses the current or most recent note in the sequence. As a result, if the Piano Roll displays a C in octave 5, Poly After-Touch Events drawn under that note have C5 integrated into them.

CONTROL CHANGE: To enter a Control Change curve, you must select the right Control Change number. Then click down with the Pencil and draw in the Control Change Events.

To avoid confusion, B&P Pro displays only one Controller at a time. Use the Control Change # command from the Display Options menu to open the Control Change Number requester. After the Controller #: prompt, enter the Controller number that you want B&P Pro to display. Or, click on the Next Controller button to cycle through all of the Control Change numbers for Control Change events in your Sequence. In this way, you can quickly jump from one number to the next. Cycling is also useful for discovering what types of Control Change events are embedded in your Sequence.

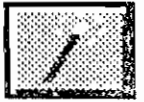


PROGRAM CHANGE: Enter each Program Change event as a number. To do this, select the Pencil and click in the Program Change region. A requester appears. With the mouse, drag the slider left or right to the appropriate Program Change number, or click the left or right arrow buttons to step through each number one at a time. As the Program Change number changes, you hear the appropriate sound for each Program Change number.

SYSTEM EXCLUSIVE: To enter a System Exclusive event, select the Pencil and click in the System Exclusive region. This opens the System Exclusive requester, described in detail at the end of the chapter.

Altering MIDI Events

Once you enter Events, you may want to edit them. To the right of the Pencil sits the Magic Wand. By selecting the Magic Wand, you can alter the Events with the mouse, which now resembles a magic wand. Click down and pass it over the Events you wish to change and their heights magically conform to the path of the mouse. Notice that the Magic Wand draws a line as the events change shape.



EXCEPTION: This holds true for all MIDI Event types except for the Program Change and System Exclusive events. To alter one of these events, touch the event line with the Magic Wand. The Program Change requester or System Exclusive requester appears, which allows you to alter the event data.

Dragging Events

If you select the Hand button, you can use the Hand to drag Events forward and backward in time. Because B&P Pro displays almost all MIDI Events as thin vertical lines, you're not required to position the mouse exactly over an Event before you click on it. Instead, click down the mouse and sweep it through the Event. The Event sticks to the mouse, which you can then drag to its destination.



If you set the Lock to Default Note option in the Preferences menu, the item moves to a grid defined by the Default Note. For example, if the Default Note is a quarter note, everything you drag moves left or right at quarter note intervals.

You can also use the Right and Left Arrow keys to move events forward or backward in song time.

Duplicating MIDI Events

To duplicate events, click on the Duplicator button or press function key "F5." When you click and drag an event, B&P Pro creates a new event of the same type, with the same data, and places it at the destination.



Erasing MIDI Events

To erase Events, choose the Eraser button, which, when selected, causes the mouse to resemble an eraser. Click down and drag the Eraser over MIDI events to delete them.



The ToolPad

You can Toolize all MIDI Events, although most Tools concentrate specifically on Note Events. Exceptions to this rule are the Delay and Echo Tools, which work on all Event types, and the Modulation, Flip, and Inverter Tools, which do their work on both Poly After-Touch and Note Events. (For a thorough tour of setting up and using the ToolPad, see Chapter 6.)

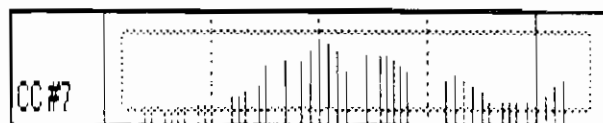


Boxing MIDI Events

You can select some of the Command buttons in conjunction with the Bounding Box. When you use the Bounding Box, you affect everything within it.



To draw the box, click down where you'd like one corner of the box to be and drag the mouse to the opposite corner. A box grows as your mouse travels. The box does not cross boundaries between data displays. Thus, you can't draw a box that encompasses Pitch Bend Events as well as Mono After-Touch Events.



The Bounding Box works with the following four Command buttons:

THE HAND BUTTON: drags everything in the box with the mouse. Once you create the box, click down on it a second time and drag it. All MIDI Events in the box move with the mouse.

THE DUPLICATOR BUTTON: duplicates everything in the box. Once you create the box, click down on it and drag it. A copy of the selected MIDI Events moves with the mouse.

THE ERASER BUTTON: erases every MIDI Event within the box, once you lift up on the mouse.

THE TOOLPAD: toolizes all events within the box with the currently selected Tool.

The Magnifying Glass

When you select the Magnify button, the Magnify window opens and the mouse resembles a magnifying glass. This window displays data, which can be edited, about each MIDI Event currently being touched with the mouse. Use the Right and Left Arrow keys on your Amiga keyboard to move through the selected event types one by one. Use the Up and Down Arrow keys to move to the event, of any event type, which occurs next chronologically. This includes all of the MIDI event categories from



Notes to Program Change. B&P Pro displays the type of event in the title bar of the Magnify window.

The first field in the Magnify window, labeled "Time," lists the time in measures, beats, and clocks. The second field, labeled "HMSF," lists the time in SMPTE format. If you click in either line with the mouse, you can change the time by entering a new one. Press the Return key when you complete the line. This causes the Event to jump to the new time.

All of the other lines differ depending on the type of MIDI Event. Remember, after you edit any of these lines, you must press the Return key to register the change. Here's a listing of what each Event's Magnify window displays:

PITCH BEND: has one line, "Bend," which displays a numeric value for the bend. The maximum positive pitch bend is 8191. The maximum negative bend is -8192. A positive bend makes the music play up in pitch, while a negative bend makes it flat.

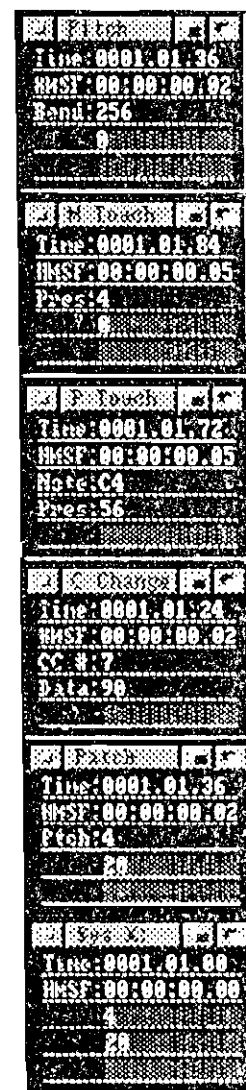
MONO AFTER-TOUCH: has one line, "Pres," which represents the key pressure. The numbers range from 0, for no pressure, to 127, for extreme pressure.

POLY AFTER-TOUCH: has two fields, "Note" and "Pres." "Note" identifies the key being pressed, while "Pres" shows the pressure as a number between 0 and 127.

CONTROL CHANGE: has two fields, "CC #" and "Data." 122 different Control Change numbers exist. The first line specifies which controller this Event addresses. The second provides the data, a number between 0 and 127.

PROGRAM CHANGE: has one field, "Pch," which is a patch selection number between 0 and 127.

SYSTEM EXCLUSIVE: has no fields except for "Time" and "HMSF." You cannot edit System Exclusive events in the Magnify window. Use the Magic Wand to see System Exclusive data.



The System Exclusive Requester

B&P Pro includes a simple requester for creating and altering System Exclusive events.

CREATING: To create a System Exclusive event, select the Pencil, then click in the System Exclusive region. B&P Pro opens the System Exclusive requester.

EDITING: To edit an existing System Exclusive event, select the Magic Wand, then click on a System Exclusive event. B&P Pro again opens the System Exclusive requester. This requester consists of four Command Buttons, a slider, a display window, and the Okay/Cancel buttons.

Considerations

1) During real-time recording and playback, B&P Pro does not support System Exclusive messages that require responses or handshaking, from the synthesizer. Usually, such messages involve downloading a large number of patches to the synthesizer. You would usually do this in advance rather than in the middle of a song. Also, the amount of data involved would clog the MIDI network, which would result in the pausing of all instruments until the computer finished downloading the patches.

If you really need this capability, the Amiga is a multitasking system; you can run a patch editor/librarian and B&P Pro at the same time, if you have enough memory.

2) The first and last bytes of the System Exclusive data always have the hexadecimal values of F0 and F7. You cannot change or delete these bytes, as they signal the beginning and ending of the event.

The next byte specifies the manufacturer's ID, Instrument ID, and channel number of the instrument. The manufacturer's ID and Instrument ID (obviously) vary from machine to machine, and are used by the instrument to verify that the event makes sense to that instrument.

The third byte and onward (to the next to last byte) specify the System Exclusive command plus any data needed by that command.

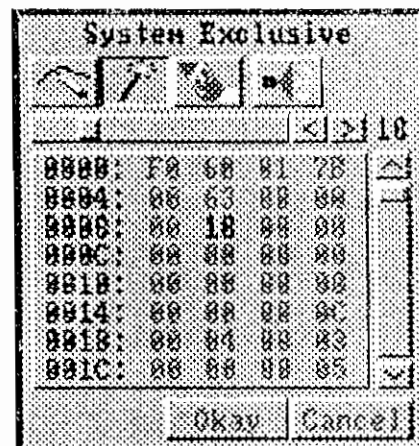
From this, we can see that all System Exclusive events must be at least three bytes long, including the start and stop bytes. The System Exclusive requester, however, does not force a minimum message length beyond the start and stop bytes.

Command Buttons

Briefly, the Command Buttons are:

PENCIL: function key "F2," enters new data into the display window.

MAGIC WAND: function key "F3," alters the value of data bytes in the display window.



ERASER: function key "F6," deletes data bytes.

SPEAKER: Sends the System Exclusive event to the MIDI cable. Since the system ID and channel number are embedded in the event data, only the intended instrument receives the event.



Entering Data

To enter data into the System Exclusive requester, select the Pencil and click on any data byte in the display window. B&P Pro creates a new data byte with the same value as the byte you clicked on. If you click to the right of the last byte, B&P Pro creates a new byte just before the ending F7 byte.

Altering Data

To change the value of a data byte in the display window, select the Magic Wand and click on the byte you want to change. You can now move the slider above the display window, or click on the arrow buttons to the right of the slider, to the desired value.

Deleting Data

To delete a data byte, select the Eraser, then click on the byte you want to erase. B&P Pro deletes each byte you click on until you select another button (or click on the Eraser again).

Sending the Command

To send the System Exclusive command to the MIDI cable, click the Speaker button. B&P Pro sends the data out through the output PipeLine.

REMEMBER: B&P Pro does not support messages that require a dialog with the synthesizer. Also, the destination channel number of the command is embedded in the command itself. If you want to send this command to more than one instrument, you must edit the channel number and send the command again.

If you are satisfied with your entry, click Okay to accept the changes, or click Cancel to abort the changes.

chapter thirteen

song parameters

Song Parameters allow you to describe your music in terms more sophisticated than MIDI events. They provide the foundation for your composition. There are two different types of Song Parameters: the Master Parameters, which characterize your Song as a whole, and the Track Parameters, which work on a Track-by-Track basis. In either case, you'll find that working with Parameters will strengthen both your understanding of music and the music itself.

In the Sequence Editor window, B&P Pro displays each Parameter in a band that runs from left to right. On the left side of each band is the name of the Parameter. Since the display can't possibly show all Notes, Parameters and Events at once, a scroll bar on the right enables you to scroll up and down.

Lyrics	Oh,	I	wish		had	a	dog	named	Spot
Chords	G:m				D:m		F#m	B:m	
K.B.S.M	G:Major	M:4/4							
Rhythm					Shuffle				
Dynamics	f				fz				
Time Sig									

Defining the Parameters

Six different Parameters exist. Before we discuss how to enter and edit them, let's consider how they relate to music in general:

Lyrics

Lyrics are words which accompany music. They exist in rock, blues, opera, pop, jazz, heavy metal, church music and many other musical forms. Lyrics can reinforce a composition's tone or contradict it altogether. They, as well as the meter, rhyme scheme, and rhythm you choose, can complement the music and further its meaning.

Recognizing that not all music is purely instrumental, B&P Pro allows you to enter lyrics directly above the measures in which they occur. You can use the printing Accessory, "Follow the Leader," to print your Lyrics. Also, if you save your song in MIDI File Format with the "MuFFy" accessory, MuFFy saves the lyrics so that notation programs that read MIDI File Format can display your lyrics



with the music. B&P Pro displays each word positioned in its appropriate measure.

Chords

Chords consist of three or more notes played at once. Many types exist, but the most common in popular music are major and minor chords and derivations thereof. Basic chords can be formed by taking the first three of every other note in a scale and playing them simultaneously. Sound confusing? Let's look at an example:

A "C major" scale consists of the notes "C,D,E,F,G,A,B,C." To form a triad (a chord with only three notes) in this key, pick a root note (the bottom of the chord) and build up from it by choosing every other note in the scale. A D triad in the key of C consists of the notes D, F and A. An F triad in the key of C consists of the notes F, A, and C. By skipping every other note, you form basic triads within a key.

Every triad or chord conveys a certain emotional tone. Minor chords are often used to project sadness, anger or seriousness, while major chords tend to sound happy and pure. Since a major scale contains seven distinct notes, seven basic triads exist within the scale. In other words, a triad can be constructed by using each note of the scale as the root note. CEG, DFA, EGB, and FAC are the first four triads in the key of C.

More specifically, rules govern the "flavor" of each triad as it relates to a key. In a major scale, for example, the triad built on the second note in the scale is always minor. The triad built on the third note is minor, too, but the triad built on the fourth note is major. If you have a keyboard available, play the triads by moving note by note up the C major scale and you will hear the differences in tonal quality. Some triads are major; others, minor. (The triad built on the seventh note is "diminished" in quality, but since this manual has space limitations, we won't branch into aspects of music theory that would explain this.) Major triads are based on the interval formula, "root note + two whole steps + a whole step and a half." Minor triads are based on the formula "root note + a whole step and a half + two whole steps."

The Chords option presents an assortment of chord types including major, augmented, major7, major6, dominant7, minor, minor6, minor+5, minor6, minor7, minorMA7, diminished, minor7-5, diminishedMA7, dominant7-5, major9, dominant7-9, dominant9+5, dominant7-9+5, and the list goes on. Should you fail to find one to your liking, create your own chords in the Define Chords window.

Although B&P Pro doesn't play chords automatically, they provide valuable information that can be used by Tools to assist in the composing process. Once chords are entered into a song, Tools come into play that make sophisticated musical decisions based upon your chord choices. As an illustration, the Accompany B Tool takes your chords and



hammers out a rhythmic accompaniment. The "Follow the Leader" Accessory prints your chord changes. B&P Pro displays the root note followed by the chord type. For instance, the major chord CEG is shown as C MAJOR.

Key & Scale/Mode

Key & Scale/Mode indicates the key, or tonal center, of a composition. The tonal center is the single note around which your music revolves. In the key of "C major," it is the note "C;" in the key "Ab minor," "Ab." For nearly every piece of music, a key can be ascertained and assigned. The key, and hence the key signature, provides a framework for composition.

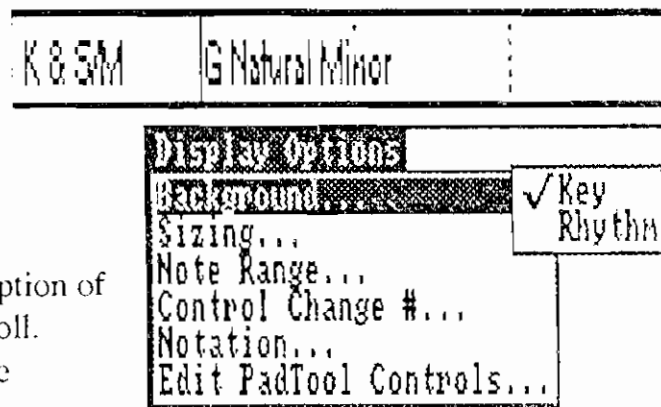
Directly related to keys and key signatures are scales. A scale, in its simplest definition, is a series of notes ascending from a specific note. Every type of scale is formulaic in nature; each is determined by half-step and whole-step relationships, which stem from the tonal center. (On a piano, C, a white key, is a half step from C#, a black key, and a whole step from D, another white key. Although not every white key is a whole-step from the white key next to it and a half-step from the black key next to it, for the most part, this is true.) To illustrate, the formula for a major scale begins with the tonal center and progresses a whole-step (denoted by "W"), W, half-step (denoted by "H"), W, W, W, H. (All the white keys in succession from C to C on a keyboard.) Minor scales are a bit trickier as there are several types.

Although most American music fits into either the Major or Minor scales, many other scales exist. Some of these are the Whole Tone, in which every note is a whole-step beyond its predecessor; the Chromatic, where every note is a half-step beyond its predecessor; the Pentatonic, containing only notes 1,2,4,5,and 6 of the major scale; and the Gypsy, whose formula is W, H, W+H, H, H, W+H.

Not only is key & scale/mode useful for editing, since the Sequence Editor can display the key signature and accidentals on the Staff, it is also quite useful for Tools that work with your music. For example, the CounterPoint Tool creates a countermelody accompaniment by knowing your chosen note system and calculating the proper intervals according to the rules of first species counterpoint. As with chords, B&P Pro comes with a long list of pre-set scales and all of the classical modes. You are free, however, to design your own with the Define Scales window.

B&P Pro displays the tonal center, or key, followed by the scale or mode name, e.g., C Major, Eb Minor, F# Blues. The Staff displays the key signatures for all major and minor scales as well as for all of the modes.

The Display Options menu provides the option of showing the Key & Scale/Mode on the Piano Roll. This command, Background... Key, shadows the



current Key & Scale/Mode in a hazy purple. As a result, you can easily compose while staying within your chosen Key & Scale/Mode.

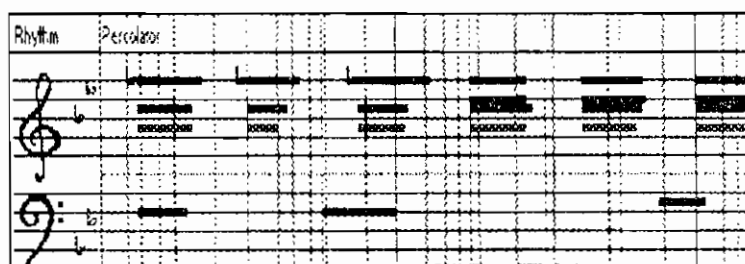
Along the same lines, the Lock to Key option in the Preferences menu confines all notes you enter or edit into your chosen Key & Scale/Mode.

Rhythm

Rhythm, in its simplest form, conveys the motion of your music. Beats of varying lengths are organized into rhythmic patterns. Rhythms can be simple or complex, on the beat or off. Certain styles of music are noted first and foremost for their rhythmic form. For instance, Samba music is characterized by syncopated rhythmic patterns, where the beat is shifted to the upbeat, or second half of the beat, over a 2/4 meter, and Shuffle is known for its triplet-based feel in 4/4 time.

Armed with a particular rhythmic style along with the key and chord progressions, any capable musician can quickly construct a song. Once again, some Tools can use rhythm to make intelligent decisions as they process your music. Accompany B is a good example. It combines the Rhythm and Chord parameters to play a chord pattern. No limit exists to the scope of conceivable rhythms, and although B&P Pro does come with a set of pre-defined rhythms, you will almost certainly use the Define Rhythms window to create your own.

B&P Pro displays each rhythm by name. If you select Background... Rhythm in the Display Options Menu, B&P Pro displays the Rhythm pattern in the background behind all the Parameters and MIDI Events. This pattern resembles a set of vertical bands. This gives you a visual cue for how the rhythm lines up with other events.



Use the Rhythm option to analyze how your Rhythm relates to your Sequence. Keep this in mind: a Rhythm consists of Note events, which have durations. The durations determine the width of the bands, some of which may overlap.

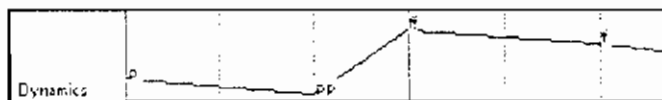
Dynamics

Dynamics indicate the volume at which each section of music should be played. If you're familiar with classical notation, you will recognize these markings as the following lower case letters: "pp," "p," "mp," "mf," "f," and "ff." These abbreviations stand for pianissimo (very soft), piano (soft), mezzo piano (medium soft), mezzo forte (medium loud), forte (loud) and fortissimo (very loud), respectively. A crescendo gradually increases the volume. The inverse is true of a decrescendo or diminuendo. Without dynamic road signs,

music sounds stagnant and lifeless. Dynamics focus attention on or away from various segments of a piece. Ironically, sometimes a quiet section of music is easier to hear than a loud one.

You can define the overall volume of your song with the Dynamics Parameter. With dynamics, you can draw crescendos and decrescendos. Like all other Parameters, Dynamics do nothing unless they are used in conjunction with a Tool. The Phrasing Tool is a very simple, but powerful implementation of Dynamics. It takes each note, places it against the Dynamics curve, and assigns it the proper velocity.

B&P Pro shows the Dynamics curve as a set of points with lines drawn between them. Each point represents a dynamic setting; for example, mezzo piano (mp) or fortissimo (ff). The connecting line conveys the dynamic change over time between the two points. To show a dramatic crescendo across one measure, you might start the measure with a dynamic point labeled "pp" and end with a second, labeled "ff." The Editor automatically draws a line between them.

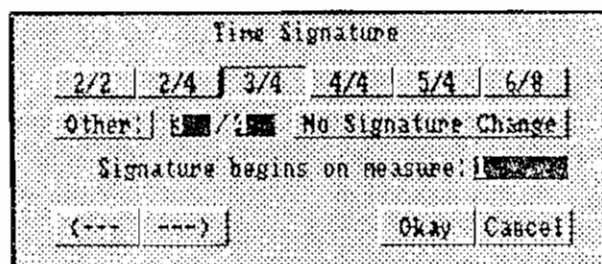


Time Signature

A Time Signature appears at the beginning of a piece as two numbers, one above the other. The lower indicates the type of note that will be used to measure each beat, (half note, quarter note, etc.), while the upper indicates the number of such beats per measure. 4/4 is by far the most common time signature.

Time signatures provide the basic rhythmic framework of a piece. Though most popular music, such as rock-n-roll, rhythm and blues, and funk, tends to be in symmetrical meters (2/4, 4/4, or 6/8), uneven meters (3/4, 5/4) often lend a fresh feel and unpredictability to music.

B&P Pro uses traditional time signature notation and permits a different time signature to be assigned for every measure that exists in a sequence. You can therefore experiment with a multiplicity of beat resolutions. B&P Pro supports all standard time signatures; however, in keeping with the "one-size-fits-all principle," you can use time signatures as bizarre as 77/8 or 36/2. To enter a time signature, select one from the pre-determined palette or enter your own.



Important considerations about Parameters

1. You do not have to use all the Parameters that B&P Pro provides. Rarely would you use all six while composing a single piece of music. The organization of your song, and more importantly, which Tools you use, dictate which Parameters are necessary and which are a waste of time.

2. Depending on how you use them, some Parameters may be more useful on a Track-by-Track basis, while others may be preferable in the Master Parameters window. Lyrics, Key, Rhythm and Time Signature usually belong to the entire composition. On the other hand, you may have different voices singing different lyrics or juxtapose different rhythms on individual Tracks. As you add and edit Parameters, think about the appropriateness of their placement. Fortunately, it's quite easy to move Parameters between the Track and the Master Parameters windows, should you wish to change them.

B&P Pro follows a simple rule with all Parameters: when a Tool uses a Parameter to process a Track, it first checks the Track Parameters. If the required Parameter type is not represented, it refers to the Master Parameters for the data.

Editing the Master and Track Parameters

Two scenarios exist for editing Parameters: editing the Master Parameters or editing the Track Parameters. Master Parameters define the guidelines used in your song as a whole. For example, if you add Key and Scale/Mode to your song, you can place it in the Master Parameters window, since usually every Track shares the same key. On the other hand, you may want separate Dynamics curves for each Track. In this case, use the Track Parameters on an individual Track basis.

To access the Master Parameters, select the Master Parameters option in the windows Menu. To access the Parameters for an individual Track, open the Sequence Editor by double clicking on the Sequencer.

The Master and Track Parameters share the same user interface. By default, B&P Pro displays all Parameters when you open the Master Parameters window and none of the Track parameters when you open the Sequence Editor. To display the Master or Track Parameters of choice, select them from the Show menu of the Sequence Editor or Master Parameters window. (You'll notice that the Show menu enables only the Parameters when opening the menu from the Master Parameters window.) This lets you hide the parameters in one window that you're using in another.

You can toggle-select more than one parameter at a time by holding the right mouse button while the Show menu is open, then clicking the left mouse button over the parameters you want to toggle. This can save you some time whenever you change the parameters to display.



The Command Buttons

On the Sequence Editor and Master Parameters windows, the first nine buttons from the left are the Command Buttons. When you press each, the mouse's icon changes. Set these to determine how you use the mouse. The following list briefly describes the seven buttons that apply to editing Song Parameters. Later in this chapter, we'll delve into greater detail.

THE MAGNIFYING GLASS: function key "F1," displays information about Parameters you touch with the mouse.

THE PENCIL: function key "F2," draws Parameters into the selected strip.

THE MAGIC WAND: function key "F3," alters currently-set Parameters.

THE HAND: function key "F4," grabs and drags Parameters.

THE DUPLICATOR: function key "F5," creates an exact copy of the selected Parameter.

THE ERASER: function key "F6," deletes Parameters.

THE TOOLPAD: not used with Parameters.

THE BOUNDING BOX: working in conjunction with the Hand, Duplicator, and Eraser buttons, enables you to draw a rectangle around a set of parameters and then Drag, Duplicate, or Erase them.

THE STEP ENTRY: not used with Parameters.



The Default Note Buttons

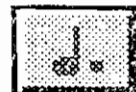
Before drawing or dragging Parameters, you should set the Default Note, in this case, the Note Value and Note Modifier buttons. These buttons help you position your Parameters at specific intervals.

When you press the mouse over each Default Note button, the button opens a pop-up menu with its options. Drag the mouse to the desired option and lift up to select it. B&P Pro displays the current setting on the button itself. Let's look at each in detail:

NOTE VALUE: determines the basic spacing between Parameters. Your choices range from a whole note to a sixty-fourth note. Select your choice from the menu by dragging the mouse to the desired choice, pressing function key "F7" to decrease the note value, or pressing SHIFT and function key "F7" to increase the note value.



NOTE MODIFIER: modifies the selected Parameter spacing (note value). The first item in this menu, a triplet, shrinks the size of the note to two-thirds its note value. The second menu option, a "normal" note, leaves the selected note value as is. The third option, the dotted note, adds half of the note to the selected note's length. In other words, B&P Pro multiplies the note value by one and one-half.



Select your choice by dragging the mouse to the desired choice, pressing function key "F8" to select the next note modifier, or pressing SHIFT and function key "F8" to select the previous modifier.

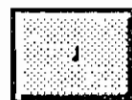
Finally, if you select the Lock to Default Note option from the Preferences menu, the Default Note determines the spacing between Parameters when you enter or drag them. To illustrate, if the Default Note is a quarter note, all Parameters you enter are placed on quarter note boundaries. When you drag Parameters, they jump from one quarter note boundary to the next.

The Zoom Buttons

THE ZOOM IN BUTTON: enlarges the display area. This shows you less of the display area, but gives you finer control over placement.



THE ZOOM OUT BUTTON: reduces the display area. This shows you more of the display area, but gives you less control over placement. At the smallest sizes, Lyrics and Chords may run together.



The Title Bar

The Title Bar in the Sequence Editor window and Master Parameters window displays numbers to help you while editing. In most cases, the following holds true: the left-hand number is the SMPTE time in which the selected Parameter occurs. More specifically, the number is displayed as hour(s):minute(s):second(s).frame(s). To the right of the SMPTE time, B&P Pro displays the Song-time of the selected Parameter. This translates into measure(s).beat(s).clock(s).

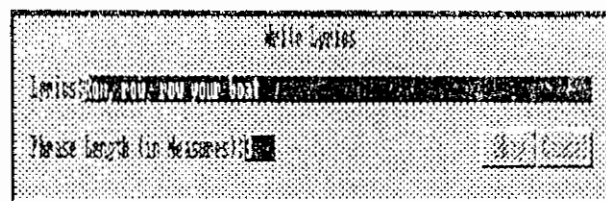
EXCEPTION: When dragging with the Bounding Box, B&P Pro shows the distance traveled from your starting point in Song time.

Entering Parameters

To enter a parameter, click on the Pencil button, function key option "F2." The mouse now resembles a pencil. Here is what happens when you draw in each Parameter type:

LYRICS: When you click the Pencil in the Lyrics region, the Lyrics Entry requester opens. Lyrics have a special problem: they must be entered in such a way that each word lines

up at its proper position in the music. If you arbitrarily place a complete sentence at the beginning of a line, the singer won't know on which beat to sing each word. Because opening the Lyrics Entry requester for every word would be time-consuming, B&P Pro offers the following short-cut:

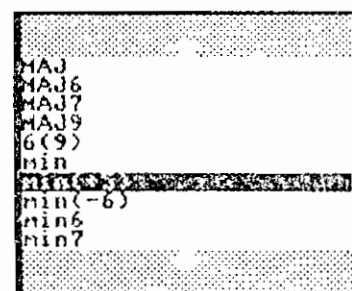


Enter the entire sentence or phrase on the Lyrics: line. Then enter the number of measures over which this sentence or phrase should occur at the Measures: prompt. When you press Okay, B&P Pro breaks your sentence into its component words and spaces them equally across the number of measures you define. B&P Pro places the first word at the point you clicked to open the requester. You can also break words into syllables by placing a dash, followed by a space, between each syllable. Because each word or hyphenated syllable becomes a separate entity in your sequence, it can now be individually positioned to your taste.

CHORDS: To enter a Chord, click the Pencil on the Chord region and hold the mouse button down. An octave of piano keys will appear under the mouse. Choose the root note of the chord by dragging the mouse to the note and lifting up.



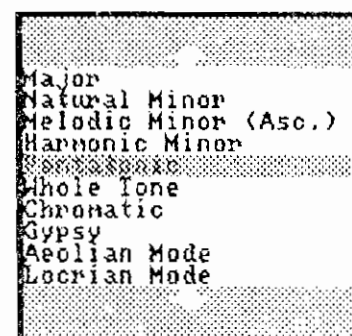
If you have not selected a Key & Scale/Mode, or the note you chose is not within the selected Key & Scale/Mode, a second menu opens under the mouse. This features a list of chords from which to choose. Since this scrolling menu contains more chords than it displays, it has two arrows, one each at the top and bottom. If you move the mouse over an arrow, the chords scroll by. Move the mouse to the one you want and click down.



If B&P Pro finds a triad that fits your selected Key & Scale/Mode, this chord menu does not open. If you don't like its choice, you can always edit the chord or enter another.

KEY & SCALE/MODE: Enter a Key and Scale or Mode as you would a Chord. Click the Pencil where the key change should occur and hold it down. Choose the key from the octave of piano keys and lift up.

A scrolling menu of Scales and Modes appears under the mouse. Move it to the scale or mode you desire and click down. Since the list of available scales is longer than the menu can show, move the mouse to the bottom arrow. It then scrolls the list up to reveal further choices. Use the top arrow in the same manner.



If you selected a black key, a third menu with a sharp and a flat now appears under the mouse. This menu lets you choose the actual note value. For example, if you choose the first black key to the right of a C, the sharp/flat menu appears. At this time, you must determine whether the selected note is a C# or a Db. Although these notes are identical in pitch, they are different notes and fit into different scales.

The Key & Scale/Mode Parameter always lines up on measure boundaries. If you place it anywhere else, it locks to the beginning of the measure. The first time you enter a Key & Scale/Mode, B&P Pro places the entry at the first measure of the Song. Subsequent Key & Scale/Mode entries stay in the measure where you click the Pencil.

RHYTHM: To enter a rhythm, click the Pencil on the Rhythm region and hold it down. A scrolling menu of available Rhythms appears under the mouse. Select the one you want and lift up. Choose from predefined rhythms or define your own. (See Chapter 16 for details on defining rhythms.)

DYNAMICS: Since B&P Pro displays Dynamics as lines between points, you must enter both the beginning and end of the dynamics curve. To enter each point, click with the Pencil and hold it down. Depending on whether you've already entered a point, the following happens: If you haven't yet entered a dynamic point, B&P Pro places a point of identical value at the beginning of the Track or Song. If you've already entered a point, B&P Pro displays the Dynamic Change pop-up menu.

From this menu, choose whether the Dynamic change is Gradual or Immediate. If you choose Gradual, then the dynamic change happens gradually from the point which precedes the one you just entered. Notice that B&P Pro draws a sloping line between the two dynamic levels. If you choose Immediate, the dynamic change is sudden. In this case, B&P Pro draws a horizontal line that becomes vertical just before the volume change.



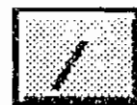
A point placed at the top of the Dynamics display indicates the loudest volume, while a point placed at the bottom, indicates the softest. For example, if you want a crescendo to occur within a four-measure time frame, set your original volume on the first of the four measures. Then set your destination volume at the end of the four measures. B&P Pro automatically shows a line indicating a gradual increase in volume between the two points.

REMEMBER: the very first point you enter always moves to the start of the Sequence.

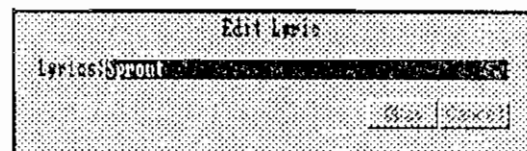
TIME SIGNATURE: To enter a Time Signature change, click with the Pencil on its starting measure. The Time Signature requester then opens. (See Chapter 4.)

Altering Parameters

After you enter a Parameter, you may want to edit it. To the right of the Pencil on the Command Buttons is the Magic Wand. When this button is highlighted (function key "F3"), the mouse takes the shape of a magic wand. Selecting this button allows you to touch a Parameter with the mouse and alter it. Wave the wand through the Parameter to change it. In all cases, this opens a menu or requester. Here's a run-down on how the mouse works with each Parameter:



LYRICS: Touching a Lyric with the Magic Wand opens the Edit Lyric requester. Edit the Lyric, then press the Okay button if you'd like to keep the change, or press Cancel to forget it.



CHORDS: Touching a Chord with the Magic Wand opens the piano keyboard under the mouse, which enables you to select a new root note for the chord. Hold the mouse down, roll it to your chord of choice and lift up. If you'd like to keep the current choice, just roll it off the keyboard to retain it.

Then the Chords list appears under the mouse. Unlike when you enter a Chord, this time B&P Pro does not attempt to fit your choice into the selected Key & Scale/Mode. The scrolling menu of Chord choices always opens. Move the mouse to your choice and click on it. If you'd rather go with what you had before, roll the mouse off the Menu and the chord reverts to its previous status.

KEY & SCALE/MODE: Edit a Key & Scale/Mode Parameter as you would a Chord. Touch it and a piano keyboard appears under the Magic Wand. Select the key by moving the mouse to the note and lifting up. Then select the Scale or Mode from the scrolling menu that appears under the mouse. Remember that, at any point, you can go with the original value by rolling the mouse off the menu. If you select a black key, the sharp/flat menu opens as is the case when entering a Key & Scale/Mode.

RHYTHM: To change a Rhythm, touch the Rhythm's name. The scrolling list of available Rhythms appears under the mouse. Select your choice by moving the Magic Wand to it and lifting up on the button. To leave the Rhythm unchanged, roll the mouse off the menu.

DYNAMIC MARKING: When you touch a Dynamic Marking with the Magic Wand, the Dynamic Change pop-up menu appears. From this menu, you can reselect the type of volume change, either Gradual or Immediate. If you choose Gradual, then the dynamic change happens gradually from the point which precedes the one you just selected.

Notice that B&P Pro draws a sloping line between the two dynamic levels. If you choose Immediate, the dynamic change is sudden. In this case, B&P Pro draws a horizontal

line that becomes vertical just before the volume change. To move a Dynamic Marking, use the Hand button (next section).

TIME SIGNATURE: Touch a Time Signature with the Magic Wand and the Time Signature requester opens. (See Chapter 4.) Change the Time Signature as desired and click on Okay to keep the change, or on Cancel, to abort.

Dragging Parameters

Select the Hand button (function key “F4”) to use the mouse to drag Parameters around and reposition them. Highlighting this button transforms the mouse into a hand. You don’t have to position the mouse directly over a Parameter before clicking on it. Instead, click down the mouse and sweep it through the Parameter. The Parameter sticks to the mouse, which you can then drag to the Parameter’s new destination.



If you set the Lock to Default Note option, the Parameter moves only in steps along a grid defined by the Default Note. For example, if the Default Note is a quarter note, everything you drag moves left or right at quarter note intervals.

You can drag all of the Parameters to the left or right. In addition to these directions, you can drag the Dynamic points up and down. Unlike the case with all other Parameters, you cannot drag one Dynamic point past another, which would create a Dynamic curve that doubles back on itself. If you’ve dragged a Dynamic Marking and wish to change its slope, use the Magic Wand to access the Dynamic Change pop-up menu.

You can also use the Left and Right Arrow keys on your Amiga keyboard to drag Parameters left or right according to the default note grid.

Duplicating Parameters

To duplicate parameters, click on the Duplicator button or press function key “F5.” When you click and drag a parameter, B&P Pro creates a new parameter of the same type, with the same data, and places it at the destination.



Erasing Parameters

To use the mouse to erase Parameters, choose the Eraser button (function key “F6”). Highlighting this button turns the mouse into an eraser. Click down and drag the Eraser over Parameters to delete them.



Tools and Parameters

You cannot use Tools to process Parameters directly; however, many Tools use Param-

eters as part of their design. As an example, the CounterPoint Tool uses the Key & Scale/ Mode to select the correct intervals. The Phrase-Shaper Tool uses the Dynamics Curve to set Note velocities. Whenever a Tool looks for a Parameter, it first checks in the Track with which it is working. If it finds no Parameter there, it consults the Master Parameters. If you have a Dynamic curve defined for Track A, but not for Track B, the Phrase-Shaper Tool uses Track A's Dynamic Curve to phrase notes on Track A, but uses the Master Dynamic curve to phrase Track B.

The Bounding Box

You can select the Hand, Duplicator, or Eraser Buttons in conjunction with the Box button. When you select the Bounding Box, instead of directly touching Parameters with the mouse, you can draw a box around them to affect everything within the box.



To draw the box, click down on one corner of the area and drag the mouse to the opposite corner. A box grows as your mouse travels. The box does not cross boundaries between different Parameters; therefore, you can't draw a box around Lyrics and Chords together. Once you have enclosed what you want in the box, lift up on the mouse.

Depending on which Command button you select in conjunction with the Bounding Box, the following happens:

HAND BUTTON: Everything in the box drags with the Hand. Once you create the box, click down on the box a second time and drag it. All Parameters in the box move with the mouse.

DUPLICATOR BUTTON: Works just like the Hand button, but creates a copy of the parameters rather than moving the selection.

ERASER BUTTON: Once you lift up on the mouse, every Parameter within the box disappears.

The Magnifying Glass

When you select the Magnify button, function key option "F1," the Magnify window opens and the mouse pointer changes to a Magnifying Glass. The Magnify window displays information about each Parameter that you select with the mouse. Click on each line to edit it. The title bar of the Magnify window displays the Parameter's name. Use the Right and Left Arrow keys to move through the parameters one by one.



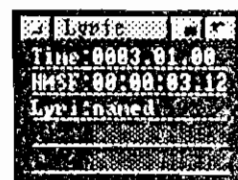
The first line in the Magnify window lists the time in measures, beats, and clocks. To change a time, click in this field with the mouse and type in a new one. Press the Return or

Enter keys on your Amiga keyboard when you finish and the Parameter jumps to the new time.

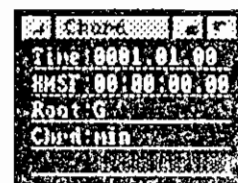
The second line lists the time in SMPTE format. You can change a time by editing either field; B&P Pro automatically updates the other field to display the equivalent time.

The remaining lines in this window change according to the specific Parameter. Remember that after you finish editing a field in the Magnify window, you must press the Return key to register the change.

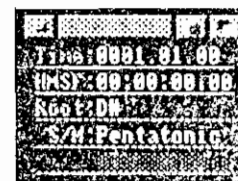
LYRICS: The Lyric Magnify window contains one field, "Lyri." Because the Magnify window stays open while you go from lyric to lyric, editing this way is actually quicker than using the Magic Wand to change lyrics.



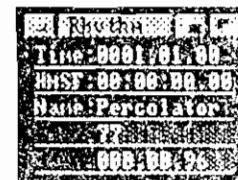
CHORDS: The Chord Magnify window contains two fields, "Root" and "Chrd." The first specifies the chord's root note; the second, the name of the chord. If you change the name of the chord, you must type in the new chord's exact name. The new chord must exist in the list of defined chords. If it does not, the original chord remains unchanged.



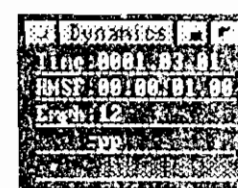
KEY & SCALE/MODE: The Key & Scale/Mode's Magnify window contains two fields, "Root" and "S/M." The first lists the key; the second, the Scale or Mode associated with it. As with the Chord, the Scale or Mode name that you type in must exist, or B&P Pro ignores it.



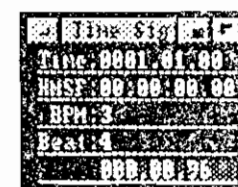
RHYTHM: The Rhythm's Magnify window contains one field, "Name," which displays the name of the selected Rhythm. If you wish, enter a new one. Remember, the entered Rhythm must exist in the list of available Rhythms.



DYNAMICS: The Dynamics' Magnify window contains two fields, "Emph" and "=". "Emph" and "=" actually represent the same things. What differs is the way B&P Pro describes them. "Emph" is the actual value of the Dynamic, or emphasis. This is a number from 0 to 127. Below, "Emph," in the second box, is "=", the equivalent music notation, ranging from "pp" to "ff".



TIME SIGNATURE: The Time Signature's Magnify window contains two fields, "BPM" and "Beat." The first describes the number of beats per measure; the second, the value of the actual beat.

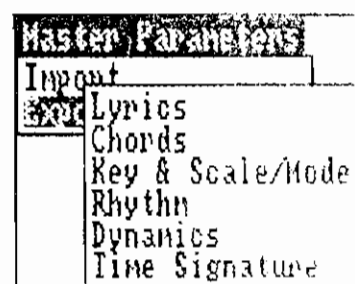


Importing and Exporting Parameters

You can copy individual Parameter lists back and forth between the Master and Track Parameters. As an example, you may wish to duplicate the Master Dynamics curve onto a Track, and then change it a bit to fit the character of the Track's part in the song. Or, you may have a great set of Chord changes in a Track and wish to make them available to the other Tracks by placing them in the Master Parameters.

To copy in either direction, use the Master Parameters Menu. This Menu can only be accessed from the Sequence Editor window of an individual Track; you cannot copy from the Master Parameters window. If you haven't already done so, open the Sequence Editor window of the Track from which you wish to import or export Parameters.

IMPORT: To import a Parameter list from the Master Parameters to an individual Track's Parameters, select the Import submenu from the Master Parameters menu. Notice that you have six options, one for each category in the Parameters list. Select your preferred Parameter option and B&P Pro automatically copies it from the Master Parameters to your Track.



EXPORT: To export a Parameter list from the Track Parameters to the Master Parameters, select the Export submenu from the Master Parameters menu. Again, you have six options, one for each category in the Parameters list. Select your Parameter of choice and B&P Pro copies it from your Track to the Master Parameters.

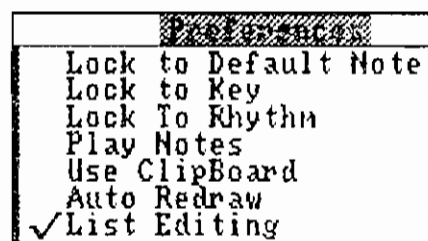
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chapter fourteen

list editing

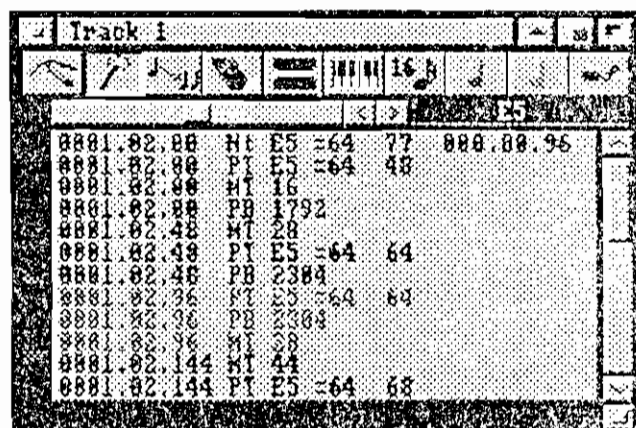
While *B&P Pro's* Sequence Editor provides a powerful graphics-based environment for editing music, certain editing operations require detail. For low-level, numeric editing of MIDI events, *B&P Pro* provides the List Editor.

To open the List Editor, you must first open the Sequence Editor for the Track you want to edit, then select List Editing from the Preferences menu.



When you select List Editing, *B&P Pro* closes the Sequence Editor window, then opens the List Editor window for that Track. The List Editor displays a list of all MIDI events in the Track.

The List Editor window contains most of the Command Buttons, and all the Default Note buttons, of the Sequence Editor window. The List Editor, however, does not have the Magnifying Glass, Hand, Bounding Box, or Zoom buttons. Below the buttons is a slider, used for modifying events or data (more on this later). Finally, the bulk of the window consists of MIDI events of various types, one event per line. Use the scroll bar to the right of the events to move through the event list.



To the left of the event list are the Edit flags. You can use these flags to edit Clips, just as in the Sequence Editor. The "begin editing" Flag is a triangle pointing upward; the "end editing" Flag is a triangle pointing downward. Except for being turned sideways, the Edit Flags in the List Editor work just as they do in the Sequence Editor. (See Chapter 15 for more information.)

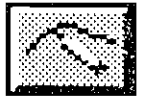


The Command Buttons

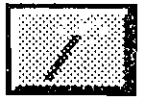
The first six buttons from the left are the Command Buttons. As you click each one

with the mouse, the mouse's icon changes. All of these buttons have keyboard equivalents as well. Set the Command Buttons to determine how you use the mouse. The following list describes each button briefly. Later in this chapter, we'll delve into greater detail.

THE PENCIL: function key "F1," enters MIDI events.



THE MAGIC WAND: function key "F2," alters the MIDI event's type and data.



THE DUPLICATOR: function key "F3," creates an exact copy of a MIDI event.



THE ERASER: function key "F4," deletes events.



THE TOOLPAD: function key "F5," contains selected Tools and processes notes with the currently-displayed Tool.



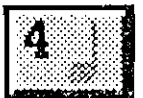
THE STEP ENTRY: function key "F6," enables step entry of events from a MIDI keyboard.



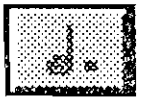
Setting the Default Note

Before drawing or step-entering events, you must set the Default Note. The Default Note consists of a note value (eighth, quarter, etc.), a modifier (triplet, dotted, normal), an articulation (staccato, legato, etc.), and a dynamic level (pp through ff). Four separate buttons set these standards. Upon pressing them with the mouse, each button reveals a pop-up menu with the options displayed. Drag the mouse to the desired option and lift up to select it. B&P Pro displays your choice on the appropriate button.

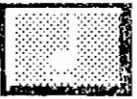
NOTE VALUE: The first button determines the currently selected note division. Your choices range from a whole note to a sixty-fourth note. Select your choice from the menu by dragging the mouse to the desired choice. You can also press function key "F7" to decrease the note value without using the mouse, or press SHIFT and function key "F7" to increase the note value.



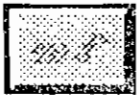
NOTE MODIFIER: The second button modifies your selected note value. The first item in this menu, a triplet, shrinks the size of the note to two-thirds its note value. The second menu item, a "normal" note, leaves the selected note value as is. The third item, the dotted note, adds half of the note to the selected note's length. In other words, B&P Pro multiplies the note value by one and one-half. Select your choice by dragging the mouse to the desired choice. You can also press function key "F8" to decrease the note length without using the mouse, or press SHIFT and function key "F8" to increase the note length.



ARTICULATION: The third button, second from the right on the Button strip, determines the relative length of the selected note. The menu range extends from staccato (short) to legato (slurred). Staccato, signified traditionally as a dot above a note, usually indicates a duration of 1/4 its full length value; Portato, signified traditionally by the absence of a marking above the note, indicates a note duration of 1/2 its full length value; Leggerio, traditionally signified as a horizontal line above a note, indicates a note duration of 3/4 its full note value; and Legato, traditionally signified with an arched line above a series of notes, indicates a note duration equal to its full value, with no perceptible space between each note. Make your selection by dragging the mouse to the desired choice and lifting up. You can also press function key "F9" to make the articulation longer in duration without using the mouse, or press SHIFT and function key "F9" to make the duration shorter.



VOLUME: The final button, the farthest to the right, determines the velocity of the note. You have six choices ranging from very soft (pp) to very loud (ff). Make your selection by dragging the mouse to the desired choice and lifting up. You can also press function key "F10" to increase the note volume without using the mouse, or press SHIFT and function key "F10" to decrease its volume.



Before entering notes, you should set the desired Default Note. This determines the length (note value + note modifier), articulation, and volume of notes that you enter.

Entering Events

To enter new MIDI events, activate the Pencil by clicking on the Pencil button or by pressing function key "F1." Then, click the Pencil on the MIDI event located just after the point where you want to insert the new event. If you want to enter a new event at the very bottom of the list, click in the blank area below the last event.



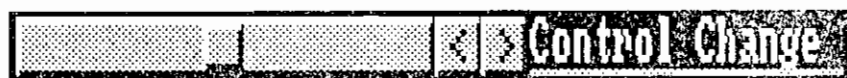
The event you enter is of the same type of event you clicked on. If you clicked on a note, the note also has the same pitch of the note you clicked on, and the volume, duration, and articulation set by the Default Note. Other MIDI events use data from the events you clicked on.

Altering MIDI Events

With the List Editor, you can edit MIDI Events directly by changing the data associated with the Events, or even by changing the Events themselves. To edit Events, click on the Magic Wand or press function key "F2."



When editing Events, the slider above the event list becomes active. To edit an



Event, click on any part of the event. B&P Pro highlights the selected data in red. Now, you can drag the slider to the desired value (or use the arrow buttons to the right of the slider).

All events in the event list consist of the song-time at which each event begins, and the type of event. Most events contain extra data which you can edit:

NOTE (NT): contains the pitch, both as a note/octave (from C0 to G10), the MIDI value of the note (from 0 to 127), the velocity of the note (from 0 to 127), and the duration of the note (in song-time).

PITCH BEND (PB): contains the amount of shift, from -8192 (maximum shift down) to 8191 (maximum shift up). Remember, the value given to Pitch Bend determines the proportion of the shift to the maximum. For example, a value of -4096 would shift the current note downward by half the maximum. The MIDI specification uses this scheme because different instruments have different Pitch Bend ranges; some synthesizers allow you to alter the maximum range.

MONO AFTER-TOUCH (MT): contains the overall keyboard pressure, from 0 to 127.

POLY AFTER-TOUCH (PT): contains the note value for the key being pressed and the pressure on that key (from 0 to 127), just as Mono After-touch. Poly After-Touch is featured only on the most expensive keyboards, since the hardware must sense pressure on each individual key.

CONTROL CHANGE (CC): contains the Control Change type (0 to 121) and the Control Change data (0 to 127). Control Change governs continuous controllers such as volume pedals and breath controllers.

PROGRAM CHANGE (PC): contains the patch number (0 to 127). Program Change controls the sound used by your MIDI device to play subsequent notes.

SYSTEM EXCLUSIVE (SX): contains no visible data. When you edit a System Exclusive event, B&P Pro opens the System Exclusive requester, described at the end of Chapter 12.

System Exclusive events, as the name implies, are special commands unique to the instrument (or product line). Manufacturers use System Exclusive events, for example, to set pitch bend ranges, transpose keys, send new patch data to the instrument, and to execute many other functions. The user's manual for your instrument can tell you whether your instrument supports System Exclusive events, and what the commands do.

Duplicating Events

To duplicate events, click on the Duplicator button or press function key "F3." When you click on an event, B&P Pro inserts an event of the same type, with the same data, directly above the event. You can then use the Magic Wand to edit the time, event type, or event data.



Erasing Events

To erase events, select the Eraser by clicking the Eraser button or by pressing function key "F4," then click on each event you want to erase. If you make a mistake, you can select Undo (AU) from the Edit menu to restore the last event you erased.



The ToolPad

To select the Toolizer button, click on it once or press function key "F5." The List Editor window contains the same ToolPad as the Sequence Editor and Song window. You can place, select, and edit Tools from the List Editor in the same manner as for other windows in B&P Pro.



Toolizing events in the List Editor can be both powerful and confusing. Powerful, since you can edit the results exactly to your liking. Confusing, since Tools can remove an event, reposition it in time, or add additional ones. For example, if you use the Echo tool on a note, the echoes get mixed in with other notes and events down the line.

Another powerful use of the ToolPad is to learn exactly how Tools affect events. You can use this knowledge to edit Tool parameters to your liking, with less guesswork and better results.

Step Entry

To enter MIDI events into the List Editor from any MIDI instrument, click on the Step Entry button or press function key "F6." Then, set the "begin editing" flag (the flag with the arrow pointing upward) to the point where you want to enter new events.



Like the Sequence Editor, any notes you step-enter from the MIDI instrument automatically conform to the length, articulation, and velocity set by the Default Note parameters. To move forward one note length without entering an event, press the Space bar. To delete the previous event, press the Backspace key.

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chapter fifteen

clip editing

B&P Pro includes sophisticated Clip editing functions. With these, you can easily rearrange sections of your music, or Clips, without starting from "square one." The power of Clip editing lies in three primary ingredients: the Edit Flags, which encompass the Clips; the Edit Menu, which controls the Clips; and the ClipBoard, which stores the Clips. This chapter addresses Clip editing in the Sequence Editor.

The Edit Flags

B&P Pro uses the Edit Flags to determine the boundaries of your Clips. The left Edit Flag, designated by a triangular flag pointing left, identifies the start of an edit operation, while the right Edit Flag, designated by a triangular flag pointing right, identifies the end of an edit operation.

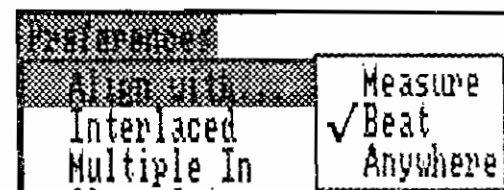


POSITIONING: To position the Flags, drag them with the mouse. If you can't see the desired position in the display, scroll the display until you can, then drag the Flag(s) into position. Dragging a Flag all the way to the left places it at the very beginning of your Sequence, while dragging it all the way to the right places the Flag at the very end of the Sequence. Notice that as you drag the Flag, you can see its SMPTE and Song time position in the title bar of the Edit window.



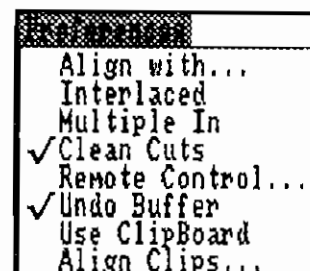
ALIGNMENT: The rules for specifying the alignment of the Edit Flags are the same for Flags in all windows:

From the Align with... option in the main Preferences menu (click on the background first), specify whether the Flags should automatically align with Measures, Beats, or Anywhere. If you select Align with... Measures, the Edit Flag always locks to measure boundaries. If you select Align with... Beats, the Flag locks to beat boundaries, and if you select Align with... Anywhere, the Flag remains exactly where you place it.



B&P Pro edits the Time Signature and Key & Scale/Mode Parameters only if you place the Edit Flags directly on measure boundaries.

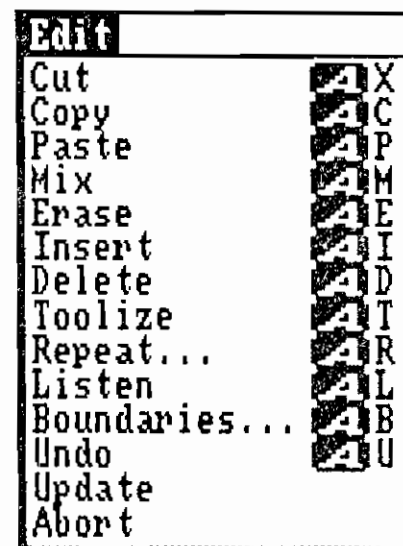
CLEAN CUTS: Normally, when B&P Pro cuts a Clip, it extracts all notes played prior to the right Edit Flag. Regardless of whether the last note extends across the Flag's boundaries, the note is included in the cut. This may or may not be desirable. If a note is held over several measures, and the cut occurs somewhere in the middle, you may prefer to break the note into two notes, one before and one after the cut.



Select the Clean Cuts option from the Preferences Menu. (Select the Tracks window first.) Notes that straddle cut boundaries are chopped off at the Flags. In addition, identical adjacent notes in a paste operation are merged. When the Clean Cuts flag is not set, notes that straddle an Edit Flag are always placed on the left side, with their full length intact. Depending on what you are editing, you may or may not want Clean Cuts.

The Edit Menu

The first Menu on the left in the Sequence Editor window is the Edit Menu. Most operations in this menu work on the section between the Edit Flags, the Clip. A Clip includes all Events and Parameters which occur between the two Flags. You can cut, copy, paste and place Clips into the ClipBoard. Let's take a look at the Edit menu:



CUT: (AX) To cut a Clip from your Sequence, use the Cut command. Doing so removes the section between the Edit Flags and everything to the right of the section shifts to the left Edit Flag. Although you can't see the Clip, it is still available for editing. Use the Paste command to insert the Clip elsewhere in your Track.

COPY: (AC) To use a Clip in conjunction with the Paste command without actually removing it, select Copy. Nothing visibly happens, but the section between the Edit Flags becomes a Clip, available for Pasting.

PASTE: (AP) To insert a Clip, use the Paste command. You need only set the left Edit Flag because the length of the inserted Clip is already determined. For example, if you cut or copy a four-measure section, the Paste command inserts those same four measures and moves everything to the right of the insertion by four measures. You may do multiple Paste operations with the same Clip. The Clip remains the same until the next Cut or Copy command.

MIX: (AM) To merge a Clip on top of a section, use the Mix command. Starting at

the left Edit Flag, B&P Pro mixes in Events, but ignores Parameters.

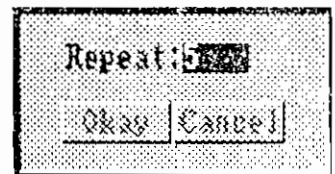
ERASE: (AE) To clear the section between the left and right Edit Flags, use the Erase command. All Events disappear, which leaves your Sequence silent during this section.

INSERT: (AI) To insert a blank space in your music between the Edit Flags, use the Insert command. This command comes in handy when adding a section somewhere in the middle of the Sequence. Insert the section, then use whatever methods you prefer to fill the gap with music.

DELETE: (AD) To delete a section between the right and left Edit flags, use the Delete command. This command operates identically to the Cut command, but does not place the deleted section into the clip buffer or ClipBoard.

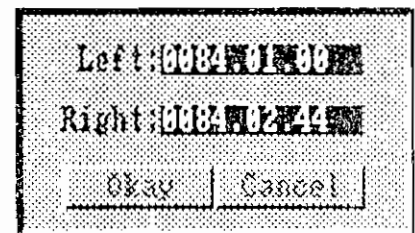
TOOLIZE: (AT) To take the currently selected Tool in the ToolPad and process the section marked off by the Edit Flags, use Toolize. (See Chapters 6 and 8.)

REPEAT...: (AR) To duplicate a section of your Sequence, use the Repeat command. This makes multiple copies of the section designated by the Edit Flags and inserts them into the Sequence. When you select the Repeat command from the Edit menu, the Repeat requester opens. Type in the number of repeats, then select Okay or Cancel.



LISTEN: (AL) To preview everything in the section between the Edit Flags, select the Listen command. B&P Pro plays all MIDI Events in the section at the current tempo. Because the Events travel down the PipeLine, any Tools you have selected to process the Output PipeLine will process the section as it plays.

BOUNDARIES...: (AB) To enter the numerical boundaries for setting the Edit Flags, use the Boundaries command. Doing so opens a requester into which you can type positions for the two Flags.



UNDO: (AU) To return your Sequence to its state prior to the last edit operation, use Undo. In addition to undoing any of the commands in the Edit menu, Undo works on all of the mouse-based editing operations, such as inserting, dragging, and altering Events.

UPDATE: To update the Tracks window, use the Update command. In this manner, your changes are integrated into the Song as a whole. B&P Pro does not automatically update the Track until you close the Sequence Editor window; therefore, if you make a mistake, you can abort the editing process and your Track remains unaffected. By selecting the Update command, you can update the Track immediately, without closing the Editor.

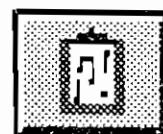
ABORT: To abort the editing process and revert your Track to its condition at the last Update (or before opening its Sequence Editor), use the Abort command. The Sequence Editor window closes without updating the Track.

The ClipBoard

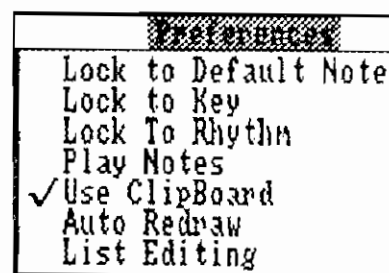
The ClipBoard stores Clips and provides a convenient way to organize sections of music as you work on a Song. The ClipBoard can store an unlimited number of Clips. To avoid confusion, you can assign each Clip a meaningful name. You can load and save Clips to disk, as well as move them from one Track to another.

Opening the ClipBoard

You can use the ClipBoard with any window that has a set of Edit Flags. To open the ClipBoard, double-click on its icon along the right side of the screen (the icon that looks like a clipboard), or select ClipBoard from the Windows menu.

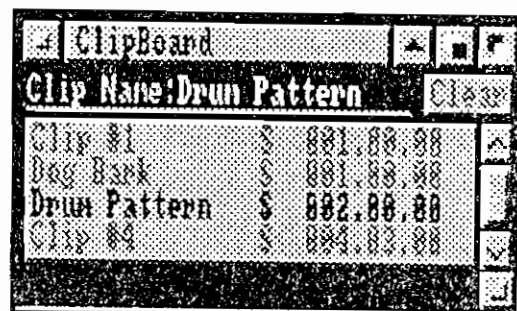


To send Clips to the ClipBoard, you must also select Use ClipBoard from the Sequence Editor's Preferences menu. A check mark appears beside Use ClipBoard to indicate that all Clip editing operations now operate through the ClipBoard. Note: You can set the Use ClipBoard flag independently for each Sequence Edit window you open.



The ClipBoard Window

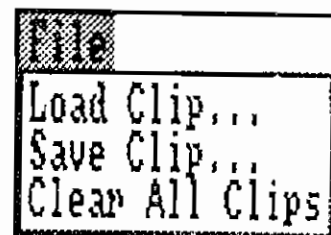
The ClipBoard window displays the list of Clips, with the currently selected Clip above the list. Each Clip in the list displays its name, the number of Tracks in the Clip (or "S" for a single Track), and the length of the Clip in song-time.



SELECTING: To select a Clip, click on its name. Use the scroll bar and arrows to scroll the Clip list up or down.

RENAMING: To change the name of the selected Clip, enter the new name after the Clip Name: prompt. If you want, you can leave the name that B&P Pro assigns.

REMOVING: To remove the selected Clip, select the Clear button.



LOADING: To load a previously saved Clip, use the Load Clip command in the File menu.

SAVING: To save the selected Clip to disk, use the Save Clip command from the File menu. Once the B&P Pro file requester opens, select or enter a file name and click on Save.

DELETING: To delete the entire list of Clips, select the Clear All Clips command from the File menu.

Editing with the ClipBoard

When you enable the ClipBoard, the four Edit menu commands, Cut, Copy, Paste, and Mix, pass Clips back and forth with the ClipBoard. Remember, you can enable the ClipBoard independently for each Sequence. Though one Edit window may be working with the ClipBoard, another may not. This situation can cause confusion, if you use the ClipBoard to transfer Clips between two Tracks.

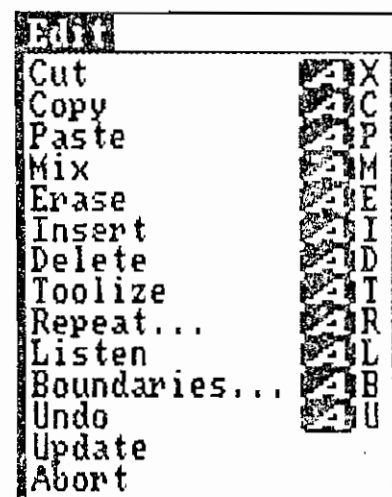
Here is how each command behaves:

CUT (AX): removes the section between the Edit Flags from the Sequence and places it in the ClipBoard. Notice that the new Clip is highlighted.

COPY (AC): duplicates the section between the Edit Flags and places it, highlighted, in the ClipBoard. The Sequence remains unchanged.

PASTE (AP): The Paste command inserts the selected (highlighted) Clip at the point marked by the left Edit Flag. The Clip remains in the ClipBoard, so that you can make multiple pastes. You can control which Parameters and Event types you paste with the Include menu. (See below.)

MIX (AM): The Mix command merges the selected Clip into the target Sequence. This command excludes Parameters from the mix. You can, however, choose which MIDI Events to mix with the Include menu.

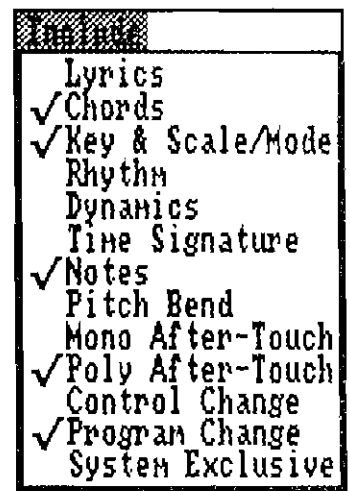


The Include Menu

The Include menu, available only when you have selected the ClipBoard window, selects the specific Parameters and MIDI Events to include in the pasting or mixing. By default, the Include menu includes everything but System Exclusive events. Omit those you don't want by clicking on the particular items in the menu.

For example, you might have a Clip with both Note and Time Signature changes in it; however, the target Sequence contains a different Time Signature. By removing Time Signature in the Include menu before pasting, you avoid inserting a conflicting Time Signature into your Sequence. The Notes, though, which you do want, are inserted unscathed.

To toggle several Include menu selections at once, hold down the right mouse button while the Include menu is open and click the left mouse button over those selections you want to toggle. This procedure can save you a great deal of time when turning several selections on or off.



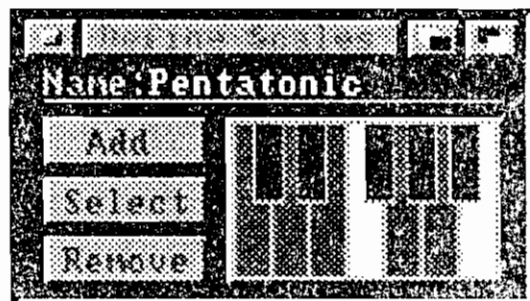
chapter sixteen

defining

When you enter or change a Key & Scale/Mode, Chord, or Rhythm, B&P Pro presents you with a menu of predefined options. For instance, when entering a Scale or Mode, you pick from a list that includes the Major, Whole Tone, and Blues Scales. Although B&P Pro provides you with a multitude of Scales, Chords and Rhythms, at times you may want to define your own.

Defining Scales or Modes

The definition of a Scale or Mode must include two elements: the set of intervals that encompasses one octave of the Scale or Mode and the name of the Scale or Mode. To create your own Scale or Mode, open the Define Scales Window, which you can access from the Define...Scales command of the Windows menu or the Define Scales & Modes... command in the Define menu of the Sequence Editor Window.



THE ONE-OCTAVE KEYBOARD: A large part of the window display is the one octave piano keyboard. By default, this keyboard shows the Major Scale. The member notes of the Scale or Mode are blue; all others are either white or black.

For your convenience, the octave ranges from "C" to "B." This way, you can set up your Scale or Mode based in the key of "C" and B&P Pro transposes the interval relationships to whatever root note you choose when entering Scales or Modes as a Parameter.

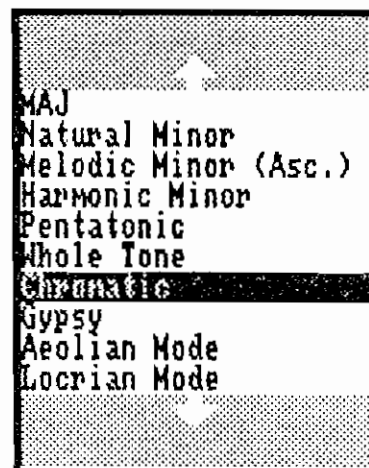
CREATING: To create a new Scale or Mode, select the Add button. The keyboard display is cleared; all notes are either white or black.

SETTING INTERVALS: To assign the intervals of the Scale or Mode, click on the notes in the keyboard that represent them. To illustrate, if the second note of the Scale or Mode is a minor third from the first note, click on the D# black key and it turns blue. To remove an interval, click on the key a second time and the key reverts to its original color.

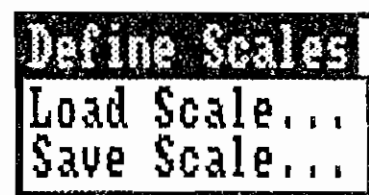
ASSIGNING A NAME: To assign a name, enter the name at the Name: prompt. B&P Pro displays this name when you select the Scale or Mode.

EDITING: In addition to creating your own Scales or Modes, you can edit pre-existing ones. Click and hold the Select button to access the scrolling list of all available Scales or Modes. Drag the mouse to your Scale or Mode of choice. If the Scale or Mode you want isn't visible, move the mouse to the arrows above and below the list to scroll it up or down. You may change the name and intervals of any existing Scale or Mode, although this may cause more confusion than it's worth!

REMOVING: You can remove a Scale or Mode from the list by selecting the Scale or Mode, then pressing the Remove button.



SAVING: With the Save... command from the Define Scales menu, you can save individual Scales or Modes to disk. Selecting this command opens the file requester. Select or create a file name in which to save, or press Cancel, to abort. (For more on using the File Requester, see Chapter 20.)

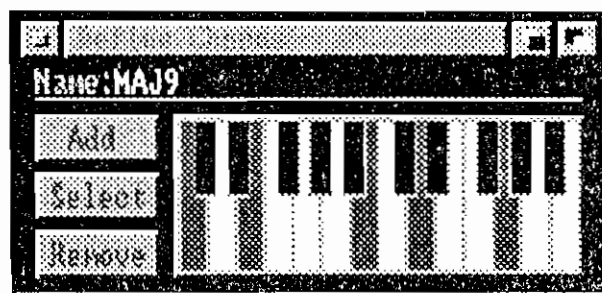


LOADING: With the Load Scale... command from the Define Scales menu, you can load a Scale or Mode from disk. (For more on using the File Requester, see Chapter 20.)

If you like, use the Load and Save commands to load in only what you need for each composition.

Defining Chords

As it does with Scales and Modes, B&P Pro comes with a long list of predefined Chords. Despite the multitude of choices, you may want to create your own Chords. The definition of a Chord must include two aspects: the set of intervals contained in two octaves of the Chord and the Chord's name.



To create your own Chords, open the Define Chords Window. Access this window with the Define... Chords option in the Windows menu of the Main Screen or the Define Chords... command from the Define menu of the Sequence Editor Window.

THE TWO-OCTAVE PIANO: A large part of the window display is a two-octave piano keyboard. This keyboard shows the Chord based on the root note, "C." B&P Pro

displays the member notes in blue, while all others are either white or black. For your convenience, the keyboard ranges from "C" to "B." In this way, you can set up your chord based on the root note "C" and B&P Pro will transpose the interval relationships to whatever root note you choose when entering Chords as a Parameter.

CREATING: To create a new Chord, click on the Add button. B&P Pro clears the keyboard, leaving only the root, "C."

SETTING INTERVALS: To assign the intervals of a Chord, click on the notes in the keyboard that represent them. For example, if the second note in the Chord is a major third from the first, click with the mouse on the "E," which turns blue. To remove an interval, click on the note a second time and it reverts to either white or black.

ASSIGNING A NAME: To give the chord a name, enter a name after the Name: prompt. B&P Pro displays the name when you select the Chord.

EDITING: In addition to creating your own Chords, you can edit pre-existing ones. Click and hold the Select button and a scrolling list of all available Chords appears. Drag the mouse to the desired Chord. If you don't see the one you want, scroll the menu up or down with the arrows above and below the list. You may edit both the name and the intervals of any existing Chord.

REMOVING: Remove a Chord from the list by selecting it, then pressing the Remove button.

SAVING: With the Save... command from the Define Chords menu, you can save individual Chords to disk. Selecting this command opens the B&P Pro file requester. Create or select the file name in which to save, or press Cancel, to abort. (For more on using the File Requester, see Chapter 20.)

LOADING: With the Load Chord... command, you can load a Chord from disk. (For more on using the File Requester, see Chapter 20.)

By using the Load and Save commands, you can keep a set of your own Chord definitions on disk and load only what you need into each of your compositions.

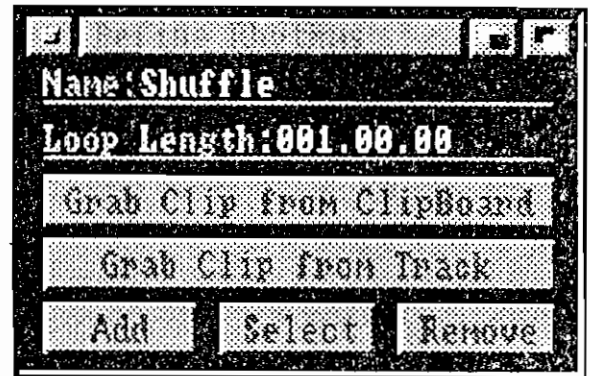


Defining Rhythms

As is true for Scales and Chords, an infinite variety of Rhythms exists. Because even within rhythm types, such as Samba, Calypso or Rock 'n' Roll, thousands of variations can be formed, B&P Pro provides you with the means to create your own.

The definition of a Rhythm includes three elements: a sequence of notes which defines the timing, emphasis, and length of each rhythmic event; a loop length that determines the length of the pattern; and a name for the Rhythm.

To create your own Rhythms, open the Define Rhythms Window from the Define... Rhythms option of the Windows menu on the Main Screen or the Define Rhythms... command in the Define menu of the Sequence Editor window. If you want to import a Rhythm from the Main Screen, open the Define Rhythms window from the Main Screen. If you want to import a Rhythm from the ClipBoard, or if you are currently in a Track's Sequence Editor window, open the Define Rhythms window from the Sequence Editor window. If you want to create



your own rhythm from scratch, you must first record a sequence of notes that the rhythm will use to define its timing, emphasis, and length. Simply tap out any notes on your instrument keyboard, as if you were playing the drums, in order to define your rhythm pattern. The actual notes you play don't matter, since the rhythm will just use the start time, attack velocity, and duration of the notes, and not the note values themselves, to define the rhythm pattern.

ADDING: To add a new Rhythm to the list, click on the Add button. This creates a blank Rhythm with no pattern and a loop length of zero.

CREATING: Because the Rhythm Pattern consists of a sequence of notes, you can create the pattern as you would a Sequence. Record it in Real-time, Step-Enter it through the Sequence Editor, or draw each note with the Pencil in the Sequence Editor. Often, sections of previously recorded songs make great Rhythm templates.

GRABBING: Once you've created a pattern of notes and activated the Add button, pull the pattern into the Define Rhythm window by clicking on one of two command buttons: Grab Clip from ClipBoard or Grab Clip from Track.

The Grab Clip from ClipBoard button copies the currently selected Clip from the ClipBoard window to the Define Rhythm window. (See Chapter 15.) Use this command if you have saved your rhythm template to the ClipBoard. By default, the loop length is the length of the Clip. You can edit the loop length as needed.

The Grab Clip from Track button copies the notes from the section bounded by the Edit Flags of the selected Track in the Main Screen or its Sequence Editor window, and copies these notes into the Rhythm. This button provides the mechanism for tapping a Rhythm into a Track and quickly transferring it into a Rhythm.

REPLACING: If a Rhythm has an existing pattern of notes, you may change it by

replacing the existing pattern with a new one. Do this by executing either of the Grab commands.

SETTING THE LOOP: Once a pattern has been transferred to the Define Rhythms window, you must assign the Rhythm a loop length in measures, beats, and clocks. For example, a loop that is two measures long would be "2.0.0," two measures, zero beats and zero clocks in length. In this case, after the Rhythm plays for two measures, it repeats.



Name: Shuffle
Loop Length: 001.00.00

ASSIGNING A NAME: Give your Rhythm a name by entering it after the Name: prompt. When you select this Rhythm, B&P Pro displays this name.

EDITING: In addition to adding your own Rhythms, you can edit pre-existing ones. Click and hold on the Select button to access a scrolling list of all available Rhythms. Then drag the mouse to the desired Rhythm. If you cannot see the one you want, use the arrows above and below the list to scroll the menu up or down. You may change the name, length, and patterns of any existing Rhythm.

REMOVING: Remove a Rhythm from the list by selecting it and pressing the Remove button.



SAVING: With the Save Rhythm... command in the Define Rhythms menu, you can save individual Rhythms to disk. Selecting this command opens the B&P Pro file requester. Create or select a file name in which to save, or press Cancel, to abort. (For more on using the File Requester, see Chapter 20.)

LOADING: With the Load Rhythm... command in the Define Rhythms menu, you can load a Rhythm from disk. (For more on using the File Requester, see Chapter 20.)

Use the Load and Save commands to store your own Rhythms on disk. Save memory by loading only what you need for each of your compositions.

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chapter seventeen

mix maestro

In traditional recording, mixing a song means combining the recorded tracks down to a final form. Mixing includes, among other things, setting relative volume levels of each track to make certain parts stand out (or stand back), and setting stereo positioning of each track. Mix Maestro brings mixing capabilities to your B&P Pro compositions, giving you real-time control over the mixing process.

An Example

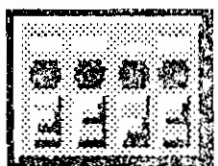
In Chapter 3, the band Hugo and the Poodles recorded each member's part of a song onto separate tracks of a multi-track recorder. We mentioned that after the studio personnel record all the tracks, they mix it all down to a final tape.

In the Poodles' stage act, Spencer (the drummer) sits about halfway between center stage and stage right, a bit toward the back. Kelly, the keyboard player, sits across from Spencer, halfway toward stage left. Chloe, the bass player, stands toward the front, but a little right of center stage. Finally, Hugo occupies center stage (except when he dances across the stage during his guitar solos). The audience perspective is the opposite.

One goal of mixing is to create the same atmosphere of depth and position as if the entire band were set up and playing live. Without depth and position, the final result would be fit only for AM radio or a mono cassette player. Thus, Spencer's and Hugo's tracks are recorded nearly equally on the left and right channels. Spencer's volume is cut back a little, since he's farther away from the microphones. Kelly is given more power on the right channel, and Chloe more power on the left. (During the guitar solo, Hugo's track gets panned from right to left and back again.) When you listen to the final result on a stereo system, you'll hear each part at a slightly different location between the speakers.

Mix Maestro gives you the same ability to control volume and depth of individual tracks in your own songs. This feature is to studio mixing equipment what B&P Pro is to a multi-track tape recorder: it provides the same features and goes beyond the capabilities of traditional equipment.

STARTING: Mix Maestro, like many other features of B&P Pro, is powerful, easy to use, and easy to access. To start Mix Maestro, select Mix Maestro from the Windows menu or double-click on the Mix Maestro icon

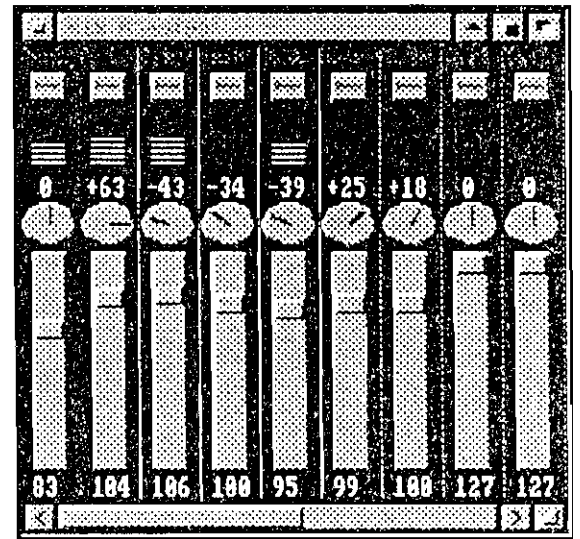


along the right side of the screen. The Mix Maestro window displays three controls for each Track in your composition. We'll cover these controls a little later. Note that the Track names displayed at the top of the window match the Track names in the Tracks window.

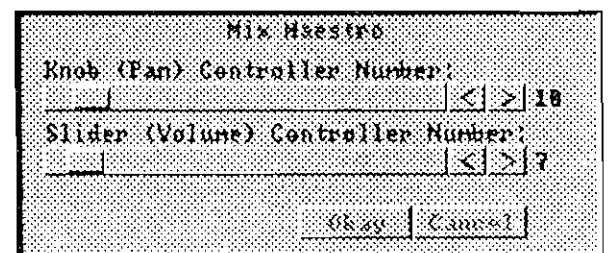
Behind the Scenes

Mix Maestro works by giving you control over MIDI Control Change events. By default, Mix Maestro assumes that MIDI Control Change #7 is assigned to volume control and that Control Change #10 is assigned to panning (stereo position).

If you want to work with other Control Change parameters, for example, if your equipment uses different Control Change numbers for volume and panning, you can set Mix Maestro to work with other parameters. To alter the Control Change parameters used with Mix Maestro, select Set Controllers... from the Mix Maestro menu.



B&P Pro opens a requester with two sliders. The top slider determines the Control Change number affected by the knob (Panning). The bottom slider determines the Control Change number affected by the Mix Maestro slider (Volume). You can drag the slider directly to the new position, or click on the arrow buttons next to the sliders to step one number at a time.



Mix Maestro Controls

Mix Maestro has three controls for each track: the Lock/Mute button, the Panning knob, and the Volume slider.

Panning and Volume

When you run your song with Mix Maestro, the Panning knobs and Volume sliders move with whatever panning and volume information (actually the values of Control Change parameters #10 and #7) is already included in your song.

PANNING: The Panning knob usually alters the Control Change #10 param-

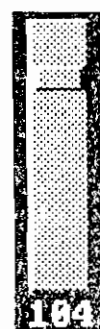


eter. This controls the balance, or "pan" of the instrument between the left and right speakers. To use the Panning knob, press and hold the left mouse button over the knob and drag the mouse left and right. You should notice the thin pointer move, and the numeric counter above the knob change, as you drag the mouse.

With the knob in the 9 o'clock position (counter showing -64), the Track position is full left (no power at the right channel for this Track). With the knob at the 3 o'clock position (counter showing 63), the Track position is full right. Intermediate settings yield intermediate positions; when the counter shows 0, you have a perfect balance between the left and right channels.

While dragging the knob, you can move the mouse outside the knob itself; as long as you hold down the mouse button, the pointer follows your moves. In fact, you can move the mouse out toward the edges of the screen to get finer control over the knob position.

VOLUME: The Volume slider usually alters the Control Change #7 parameter. On many synthesizers, this parameter controls Volume. To use the Volume slider, drag the small square up and down in its track. Watch the numeric counter at the bottom of the Mix Maestro window; as you move the Volume slider, this number changes to show you the exact volume level. The numbers range from 0 (dead silence) to 127 (full volume).



The Lock/Mute Button

The Lock/Mute button toggles between three modes: Normal, a plain grey button; Lock, a grey button with a blue key; and Mute, a grey button with a red "X." To select any of these three modes, click on the Lock/Mute button one or more times.



LOCK: lets you change several Tracks at once, effectively locking the Volume sliders together for the selected Tracks. To lock Tracks together, select Lock for each Track you want to lock together, then move the Volume slider on any locked Track. As you move the slider, the volume values under all locked sliders scroll proportionally. When you finish moving the slider, the sliders on all the other locked Tracks move to their new positions.

Locking is very useful when dealing with groups of related instruments, such as drum tracks or a horn section, which tend to be grouped in a live performance. Without locking Tracks, it would be impossible to change more than one Track at a time, or to fade all Tracks at once.. If you want to lock all the Tracks in your song together, select Lock All from the Mix Maestro menu. This sets the Lock button on all Tracks that are not already locked. Conversely, you can select Unlock All from the Mix Maestro menu to unlock all Tracks.

MUTE: lets you silence the selected Track upon playback. Use this when you wish to mute certain tracks during mixdown. To mute a Track, select Mute,



the red "X," from the Lock/Mute button. If you want to mute all the Tracks in your song, select Mute All from the Mix Maestro menu. This sets the Mute button on all Tracks that are not already muted. Conversely, you can select UnMute All from the Mix Maestro menu to unmute all Tracks.

Using Mix Maestro

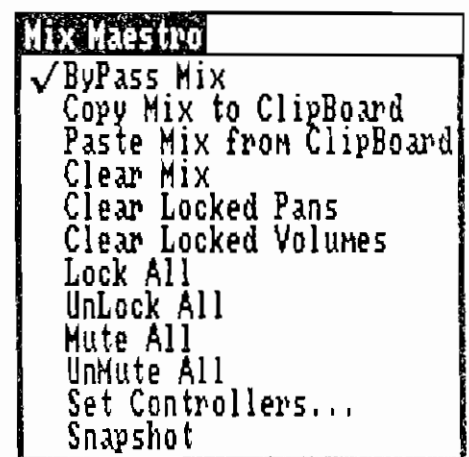
To use Mix Maestro, open the Mix Maestro window and click the Start or Play buttons in the Transport Controls window. If you already have Control Change #10 or #7 events in your song, the knobs and sliders for each Track move with the set values as the song plays. Dragging the Volume slider or Panning knob for any Track overrides the Control Change information in your song, and replaces it with the values you set. If you have several Tracks locked together, all the locked Tracks immediately reflect the changes you make to any.

Before you begin your mix, you might want to set all pan and volume positions so that your song begins with these values. To do so, first set all your panning knobs and volume sliders to the desired positions, then select Snapshot from the Mix Maestro menu. Snapshot grabs the position of your knobs and sliders and places their respective Control Change values at the beginning of each Track.

Once you've mixed your music, Mix Maestro's knobs and sliders move in real-time, automating your mix. An LED display appears on each Track between the knobs and Lock/Mute buttons. The higher the CC data values for the Track, the higher the LED will display.

Undoing or Bypassing Your Mix

If you are unsatisfied with your mix, you can undo your efforts. To clear the volume or pan information from one or more Tracks, select Clear Locked Volumes and Clear Locked Pans respectively from the Mix Maestro menu. Doing so effects all Tracks locked with the Lock button. If you're unhappy with your mix as a whole, use the Clear Mix command from the Mix Maestro menu to clear all pan and volume information. If you're pleased with your mix, but want to disregard it temporarily, use "Bypass Mix."



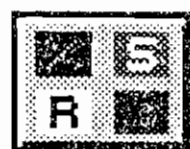
Saving and Restoring Your Mix

Once you're satisfied with your mix, you can save it in the ClipBoard and retrieve it at a later time. From the Mix Maestro menu, use the Copy Mix to ClipBoard command to save your mix as a Clip. Once you've copied a mix into the ClipBoard, use the ClipBoard's File menu to Load and Save your mix to disk. (For more information on using the ClipBoard, see Chapters 8 and 15.) When you want to retrieve a mix from the ClipBoard, use the Paste Mix from ClipBoard command.

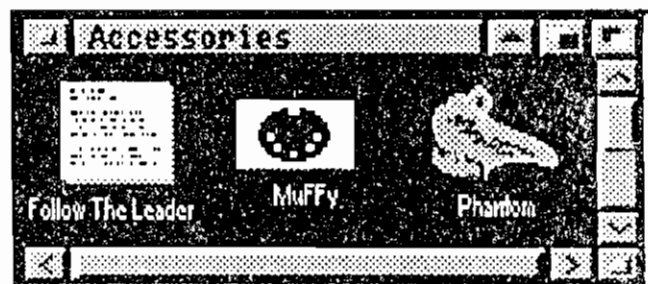
chapter eighteen using accessories

B&P Pro's open-ended design affords several advantages... flexibility, expandability, and affordability, to name a few. By investing in B&P Pro now, you've invested in a future of state-of-the-art musical components. Accessories provide this link by enhancing B&P Pro's built-in features. And, as you grow as a composer, B&P Pro grows with you. To whet your appetite, we've included some Accessories with B&P Pro itself.

Accessories reside in the Accessories window. To open the Accessories window, select it from the Windows menu in the Main Screen or double-click on its icon.

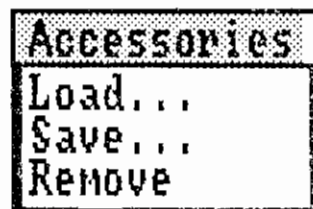


The Accessories window displays all currently loaded Accessories as icons with their names beneath them. Use the scroll bar and arrows to view those Accessories which you cannot see. B&P Pro does not automatically load all accessories. (See "Loading" below.)



USING: To use an Accessory, double click on its icon. (For specific information about each Accessory, see Appendix B.)

LOADING: To install an Accessory, select Load... from the Accessories menu. The File Requester, which lists all of your Accessories, opens. (See Chapter 20.) Select an Accessory and load it into B&P Pro. Once you load an Accessory, it becomes an integral part of your system and is automatically reloaded every time you run B&P Pro.



SAVING: To install an Accessory from a floppy disk to another floppy disk or hard drive, select the Save... command from the Accessories menu. This command copies the Accessory to your selected file name and instructs B&P Pro to load the Accessory from the new location the next time it runs.

REMOVING: To remove an Accessory, click on it once, then select the Remove command from the Accessories menu. B&P Pro removes the Accessory from the system, no longer reloads it the next time B&P Pro is run, but does not delete it from disk.

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chapter nineteen

printing notation

B&P Pro provides several options for printing your composition. You can print a concert or transposed score from the Song menu, a Group of Tracks from the Groups menu, or one part from either the Tracks menu or a Track's Sequence Editor window. In any case, please read the following chapter thoroughly and carefully.

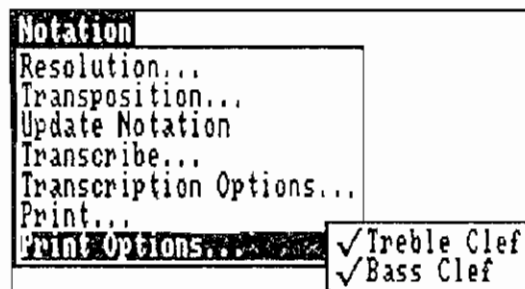
Preparing to Print

Before you print a Track, you must arrange things so that B&P Pro will print to your specifications.

The Notation Menu

Open the Sequence Editor window and set the following parameters found in the Notation menu: (See Chapter 11 for Update Notation, Transcribe, and Transcription Options.)

RESOLUTION: the smallest note value that B&P Pro displays and prints. (See Chapter 11.)



TRANSPOSITION: the key (if not the original key) in which a particular instrument plays. Set the transposition using the Transposition requester. (See Chapter 11.)

PRINT OPTIONS: the number of staves that B&P Pro will print. By default, B&P Pro prints both Treble and Bass Clef, although you may choose either or both.

Organizing Your Score

NAMING: To enter the title and composer of your piece, select the Title/Author... command found in the Song menu, then enter the appropriate information in the Title/Author requester. (See Chapter 4.) B&P Pro centers the title on the top and places the author's name in the upper right-hand corner of the first page it prints.

LABELING: To label each part with the correct instrument name, use the Track Name requester found in the Tracks window. (See Chapter 4.) B&P Pro prints the name of each

part in the top left-hand corner of the first printed page. In a Concert or Transposed Score, B&P Pro prints the name of each part above the first measure of each line.

ORDERING: B&P Pro prints the individual parts of Concert and Transposed Scores in the order in which the Tracks appear in the Track window. To rearrange the ordering of your Tracks, and thus the print order of your score, use the Track Up and Track Down buttons found on the top of the Tracks window. (See Chapter 4.)

Chords, Lyrics and Dynamics

If you like, B&P Pro can print chords, lyrics and dynamics along with your printed music.

CHORDS: To enter chords for a given Track, select Chords from the Show menu of that Track's Sequence Editor, then follow the instructions given in Chapter 13 for entering chords.

LYRICS: To enter lyrics for a given Track, select Lyrics from the Show menu of that Track's Sequence Editor, then follow the instructions given in Chapter 13 for entering lyrics.

DYNAMICS: To enter dynamics for a given Track, select Dynamics from the Show menu of that Track's Sequence Editor, then follow the instructions given in Chapter 13 for entering dynamics.

The Print Requester

Once you have finalized your printing specifications, open the Print requester by selecting the Print... command. When you select the Print requester from the Song menu, B&P Pro prints the entire score; when you select it from the Group menu, B&P Pro prints only the selected Group's member Tracks; and when you select the Print requester from the Track menu or an individual Track's Sequence Editor window's Notation menu, B&P Pro prints the contents of the Track.

Print Part		
Sections	Bar Numbers	Tempo
Chords	Lyrics	Dynamics
Concert Score		Transposed Score
From Bar: 10000	To Bar: 24000	All
High Res		
Default Res	Preview	Print Cancel

Print Requester Options

The Print requester displays ten additional options. To turn each option on or off, click

on its button. Unlike the Song Parameters, which are determined in an individual Sequence Editor window, these parameters apply to the song as a whole:

SECTIONS: Prints the A-B-A section names above the music.

BAR NUMBERS: Prints the measure number over each line's beginning measure in your music.

TEMPO: Prints the tempo at the beginning of your music.

CHORDS: Prints chord changes, entered in the Song Parameters, above each Track, or part. In either a Concert or Transposed Score, B&P Pro prints chords which were entered in the Master Parameters above the first Track.

LYRICS: Prints lyrics, entered in the Song Parameters, above each Track, or part. In either a Concert or Transposed Score, B&P Pro prints lyrics which were entered in the Master Parameters above the first Track.

DYNAMICS: Prints dynamic markings, entered in the Song Parameters, within a Track, or part.

CONCERT (SCORE/KEY): Prints each Track without transposition.

TRANPOSED (SCORE/KEY): Prints each Track transposed by the key established in the Transposition requester.

HIGH RES: Automatically uses a density of 7 for the printer selected in the Workbench Printer Preferences while printing your score, resulting in high-quality printer output.

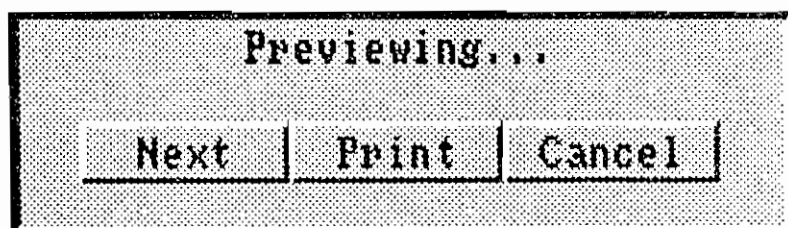
DEFAULT RES: Uses the exact settings you have specified for the printer selected in the Workbench Printer Preferences.

Selecting Measures to Print

To specify which measures B&P Pro will print, enter the starting and ending measure numbers after the From Bar: and To Bar: prompts. If you wish to print all measures, click on the All button, which sets the fields to cover the entire range of the piece.

Previewing

To view the final output without actually sending it to the printer, click on the Preview button found in the Print requester. This opens a small screen



with the notation displayed. The notation display will vary depending on whether you select Print... from the Song, Group, or Track menus, or from the Sequence Editor. B&P Pro also opens a small requester with three buttons: Next, Print and Cancel.

NEXT: Click on Next to view the next line of notation. B&P Pro will show you each line of notation until it has displayed all of the selected measures.

PRINT: Click on the Print button to print the selected measures .

CANCEL: Click on the Cancel button to access the Print Requester again. (If you wish to exit the Print Requester, click on its Cancel button.)

Printing

B&P Pro prints notation by sending an image of the music to the Preferences printer driver. In order to print properly, you must set Preferences from Workbench to accommodate your printer. You can control the quality of the image by adjusting these Printer Preferences, as well. In particular, the higher the density, the better then print quality. (Please consult your AmigaDos manual for more information on setting up your Printer Preferences.)

PRINT: To begin printing, click on the Print button. B&P Pro opens a display screen, paints the notation in it, and sends this out to the printer. Above, it opens a requester with a Cancel button. Printing can take a while, so be patient. Click on the Cancel button to abort printing.

CANCEL: To leave the Print Requester without printing, click on the Cancel button.



chapter twenty

the file requester

The File Requester organizes your Songs, Tracks, Tools, MacroTools, Parameters, and Accessories. It also enables you quickly to access or store all of your data. Unfortunately, different types of software use different file requesters. This chapter describes B&P Pro's file requester.

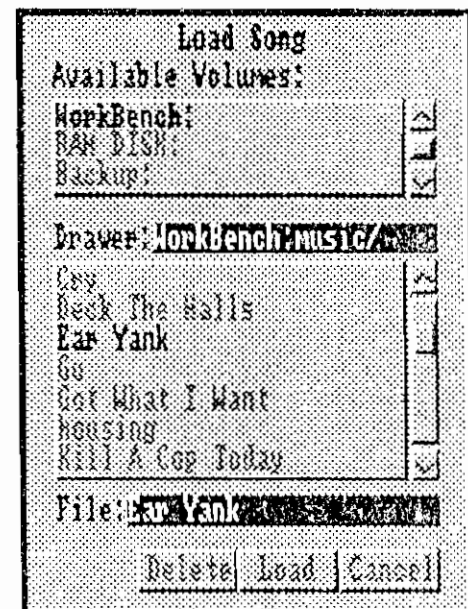
Whenever you load or save something to disk, B&P Pro displays the File Requester.

The Display

AVAILABLE VOLUMES: In the Available Volumes box, the File Requester displays by name all of the volumes currently available to your Amiga. This includes any RAM disk or hard disk devices that you may have. If more than three Volumes exist, click on the up and down arrows to scroll through the list. When you change disks, the list of Volumes is refreshed when you place the new disk in the drive. To select a Volume, click on its name in the list. B&P Pro searches that Volume for Files.

DRAWER: The Drawer shows the name of the current Drawer (directory) displayed in the File List below it. The Drawer name can be anything which is a legal path for a Directory. For example, DF1: and RAM:c are legal names as long as DF1: and RAM:c do indeed exist.

FILE LIST: The File List shows the appropriate Files in the Drawer. For example, if you're loading Tools, then only Tool files are listed. In addition to Files, the List also displays Directories and Subdirectories (a Drawer within a Drawer). They both have "(dir)" after their names. To enter either one, click on its name. The Drawer name changes to reflect this name and the File Requester displays the Files in that Directory or Subdirectory.



Loading, Saving and Deleting

To load or save a file, click twice on the File's name. Alternatively, you can click on the File name, then click on the Load or Save button. If you are saving a specific file for the first time, create a name for it. Use the File name entry to do this. Click in the box and type the name. When you press the Return key on your Amiga keyboard, B&P Pro closes the File Requester and saves the File in the Directory designated by the Drawer name.

To abort the process, click on the Cancel button. To delete a file, click on the Delete button. Use caution with this command, since it will permanently delete a file from your disk.

chapter twenty-one

glossary

The following are musical and technical terms that may come in handy when you are composing and producing music. It is by no means an unabridged list.

8VA - one octave higher.

8VB - one octave lower.

ACCELERANDO - to increase in speed.

ACCENT - an emphasis given to a note.

ACCIDENTAL - any chromatic sign note found in the key signature.

ADAGIO - slow.

AEOLIAN MODE - the basic scale beginning on the note A; a mode beginning on the sixth degree of the major scale.

AFTER-TOUCH - a MIDI event which conveys how hard a key has been pressed after the initial strike.

ALGORITHMIC COMPOSITION - computer-based improvisation within performer-defined parameters.

ALLEGRETTO - slower than allegro.

ALLEGRO - fast.

ANDANTE - moderately slow.

ARTICULATION - the punctuation given to a note; for example, whether it will be played short or long.

A TEMPO - revert to the original tempo.

AUGMENTED - one half-step higher in pitch

BASIC NOTE - notes which are unaffected by accidentals.

BASIC SCALE - the alphabetical succession of notes extending one octave in length and beginning with the letter A. (ABCDEFGA).

BASS CLEF - placed on the left side of the staff to establish the location of the note "F" on the fourth line; often called the "F clef."

BEAT - the simplest manifestation of rhythm in traditional music; indicates the pulse of the music.

CHORD - three or more tones sounding together.

CHROMATIC HALF-STEP - a half-step which uses only one basic note, for example, F and F#.

CHROMATIC SCALE - a succession of chromatic half-steps one octave in length; all the sounds contained in one octave.

CHURCH MODE - the octave scales employed in medieval church music.

CLOCK - in electronic terms, that which keeps time by the emission of pulses and serves to synchronize.

COMMON TIME - the 4/4 time signature.

COMPOUND TIME - time in which the beat is divisible by three.

CONTROL CHANGE - a MIDI Event which reflects the value of continuous controllers.

COUNTERPOINT - music consisting of two or more lines that sound simultaneously.

CRESCENDO - a gradual increase in volume.

DECRESCENDO - a gradual decrease in volume.

DEFAULT - a pre-existing parameter value.

DEGREE - one of eight consecutive tones in a major and minor diatonic scale. Degrees are counted upward from the keynote.

DIATONIC - by, through, with,

within, or embracing the tones of the standard major or minor scale.

DIATONIC HALF-STEP - a half-step using two basic notes, for example, F# and G.

DIMINISHED - an interval that is one half-step lower in pitch than its basic form.

DIMINUENDO - see "decrescendo."

DORIAN MODE - a church mode which corresponds to the scale from D to D played on the white keys of the piano; the basic scale starting on the note D.

DOT - increases the note value by one-half.

DOTTED HALF-NOTE - a note containing three quarter notes.

DOUBLE-TIME - an instance where the beat resolution halves, resulting in a beat that feels twice as fast.

DYNAMICS - the varying and contrasting degrees of intensity or loudness in musical tones; traditionally ranging from fortissimo to pianissimo.

EDIT - to alter pre-existing data.

ENHARMONIC - when two or more notes represent the same pitch, for example, C# and Db.

FLAT - denoted by a "b;" that which lowers a basic note by a half-step.

FORTE - (f) loud.

FORTISSIMO - (ff) very loud.

FORTISSISSIMO - (fff) very, very loud.

GLISSANDO - a rapid scale effect between two notes.

GYPSY SCALE - a scale with two augmented seconds, probably of Indian origin.

HALF-NOTE - a note one half the value of a whole note and represented in traditional music by a white circle with a stem.

HALF-STEP - the smallest interval in the tonal system used in most Western music; two half-steps combine to make a whole-step.

HALF-TIME - a rhythmic feel where the tempo remains the same, but the accent of the beat changes to double the resolution.

HARMONIC CHORD INVERSION - when the lowest note of a chord, the root, is in an upper position instead of being the bass.

HARMONIC MINOR SCALE - a minor scale with the raised seventh degree providing a leading tone.

HARMONY - the chordal structure of a musical composition; several voices sounding simultaneously within the key.

INTERVAL - the difference in pitch between two tones; the successive or simultaneous sounding of two tones.

IONIAN MODE - a church ecclesiastical mode which corresponds to a major scale.

KEY - the predominance of the keynote over the remaining tones in a scale; tonality.

KEYNOTE - the first note of a scale.

KEY SIGNATURE - an arrangement of sharps and flats placed on the left of a staff to denote a specific key and scale.

LARGO - extremely slow.

LEADING TONE - the seventh degree of the major and harmonic minor scales.

LEGATO - a note duration equal to its full value with no perceptible space between each note; signified with an arched line above a series of notes.

LEggerio - a note duration of usually $\frac{3}{4}$ its full note value; signified by a horizontal line above the note.

LOCRIAN MODE - a church mode based on the seventh degree of the major scale.

LYDIAN MODE - a church mode based on the fourth degree of the major scale.

LYRICS - the words which accompany music.

MAJOR SCALE - a scale that conforms to the following stepwise pattern: whole, whole, half, whole, whole, whole, half; same as the Ionian mode; considered as a whole, consists of whole-steps except for half-steps between the 3rd and 4th, and the 7th and 8th degrees; all the white notes on the piano from C to C.

MEASURES - divisions of music

containing the full value of the current time signature.

MELODIC MINOR SCALE - a minor scale which eliminates the interval of an augmented second between the sixth and seventh degrees of the harmonic minor scale, thereby providing a smoother melodic progression. When ascending, the sixth and seventh degrees are raised; when descending, these notes are unaltered.

METER - various patterns of rhythmic stress within a measure.

METRONOME - a device which emits a constant beat and can be set to reflect a specific tempo setting.

MEZZO FORTE - (mf) medium loud.

MEZZO PIANO - (mp) medium soft.

MIDI - abbreviation for musical instrument digital interface; a means of allowing electronic instruments to communicate between themselves.

MIDI CABLES - cords which transmit MIDI data to and from other MIDI instruments.

MIDI TIME CODE - a system that designates real-time location by transmitting quarter-frame messages at 120 per second.

MIXOLYDIAN MODE - the mode corresponding to the progression from G to G on the white keys of the piano.

MODE - the formation of a series of notes one octave in length based on each degree of the basic scale; or a condition which determines how something may function.

MODERATO - at a moderate pace.

MODULATE - to shift from one scale or mode to another; often used to "freshen" a motif during recapitulation.

MONO AFTER-TOUCH - a MIDI Event which describes how hard a key is pressed.

NATURAL - cancels a previous accidental, resulting in a basic note.

NATURAL MINOR - a minor scale without chromatic alterations, therefore lacking the leading tone; the Aeolian mode or the basic scale starting on the note A.

NOTE - a symbol used to represent tones; in classical terms, notes indicate pitch as well as relative duration.

NOTE OFF - a MIDI Event which describes when a note ceases to play.

NOTE ON - a MIDI Event which describes when a note is played.

OCTAVE - results when the frequency of a pitch is either doubled or halved; the distance between eight consecutive notes in a major or minor scale.

PARAMETER - a variable.

PATCH - that which designates or defines a synthesized sound; also referred to as a program or voice.

PERFECT INTERVAL - an interval that is not diminished or augmented.

PHRASING - a means of shaping the linearity of your music.

PHRYGIAN MODE - the basic scale starting on the note E.

PIANISSIMO - (pp) very soft.

PIANISSISSIMO - (ppp) very, very soft.

PIANO - (p) soft.

PITCH - determined by the frequency of vibration.

PITCH BEND - an action, usually manual, that raises and lowers the pitch of a sound.

POLY AFTER-TOUCH - a MIDI Event which transmits key pressure on an individual key basis.

PORTATO - a note duration of one-half its full length value; signified by the absence of a marking above a note.

PRESTISSIMO - extremely fast.

PRESTO - very fast.

PROGRAM CHANGE - a MIDI event which instructs your MIDI device to change patches.

QUANTIZATION - a means of conforming input notes to a specific beat or beat fraction.

QUARTER-NOTE - denoted by a black circle and a stem; represents one-fourth of a whole note.

RALLENTANDO - to gradually slow the tempo; similar terms are ritardando and decellerando.

REAL-TIME - the time in hours, minutes and seconds.

REST - a symbol that represents periods of silence; a rest sign corresponds to each of the basic note values.

RHYTHM - the motion of the music; the organization of beats of various lengths.

RITENUTO - the immediate reduction of speed.

ROOT - the lowest tone of a chord; the generating tone of the triad, which exerts a strong influence over the other two members.

SCALE - the tones contained in one octave arranged in a stepwise ascent.

SEQUENCER - a computer-based device that accepts as input the data transmitted by any MIDI controller; once inside the machine, the data can be altered, played back and stored in some permanent form.

SFORZANDO - (sfz) a mechanism by which a note is heavily accented, then sustains a volume above that of the previous note.

SFORZANDO CRESCENDO - a mechanism by which a note is heavily accented, drops in volume, then gradually increases that volume; typically used during chords of long duration.

SFORZANDO PIANO - (sfzp) a mechanism by which a note is heavily accented, then drops in volume.

SHARP - denoted by a #; raises the pitch of a basic note by a half-step.

SIMPLE TIME - when the beat is divisible by two.

SMPTE - a type of time code, adopted by the Society of Motion Picture and Television Engineers, that indicates location in time and synchronizes playback.

SONG POSITION POINTER - a MIDI message which indicates a location in the sequence by counting the number of MIDI Clocks from the start of the piece.

SONG-TIME - the time in measures, beats and clocks.

SOUND - generated by a vibrating body such as a string, column of air or metal plate.

SOUND WAVES - transmitted through the atmosphere as alternate compressions and rarefactions, which are received by the ear and produce in the listener the sensation of sound.

STACCATO - a duration of usually 1/4 its full note value; signaled by a dot placed above a note.

STAFF - traditionally used to notate the property of sound, consisting of parallel horizontal lines with intervening spaces used to indicate the pitch of tones.

STEP-ENTRY - a means of recording music one note at a time.

STRONG BEATS - in a measure, beats that are stressed more strongly.

SUBDIVISION - dividing the beat into smaller parts.

SYNCHRONIZATION - a process in which instruments, recording, and/or visual images play in tandem, and whose playback rate is controlled from a common time code.

SYNCOPE - placing the rhythmic emphasis on the upbeat of the music.

SYNTHESIZER - an electronic device designed to reproduce and manipulate sounds.

TEMPO - the speed at which the music is played.

TIMBRE - the quality of the sound.

TIME SIGNATURE - that which appears at the beginning of a piece as two numbers, one above the other; the lower indicating the type of note to be used to measure each beat, the upper, the number of such beats per measure.

TONE - a sound of definite pitch and vibration.

TRANSPOSE - to shift a note or configuration of notes by a specified interval within the key.

TREBLE CLEF - placed on the left side of the staff to establish the location of the note "G" on the second line; often called the "G Clef."

TRIAD - three tones sounded simultaneously.

TRIPLET - three even beats which occur where normally only two do.

UPBEAT - the second half of a beat; emphasized in syncopation.

VELOCITY - the force with which a key is pressed; indicated by numerical value between 0 - 127.

VOLUME - aural intensity.

WEAK BEATS - in a measure, beats that aren't stressed as strongly as others.

WHOLE-NOTE - in its most commonly accepted definition, a note containing four beats.

WHOLE-STEP - two half-steps.

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chapter twenty-two a reading list

B&P Pro touches many different areas of modern musical composition and production: music theory, MIDI, arranging and composition, computers... The more knowledgeable you are in all of these fields, the better able you'll be to use B&P Pro. Because this manual would be the size of Mount Rushmore, were we to include instruction in all of these areas, we present to you our recommended list of reading:

Music Theory

Basic Materials in Music Theory, by Paul O. Harder. Allyn and Bacon, Inc.

Harmonic Materials in Tonal Music - Parts One and Two, by Paul O. Harder. Allyn and Bacon, Inc.

Harmony, by Walter Piston. W.W. Norton and Company, Inc.

Pocket Manual of Musical Terms, by Theodore Baker. Schirmer Books or Macmillan Publishing Company, Inc.

The Harvard Dictionary of Music, by Willi Apel. The Belknap Press of Harvard University Press.

MIDI

MIDI for Musicians, by Craig Anderton. Amsco Publishing of Music Sales Corporation.

Using MIDI, by Helen Casabona and David Frederick. Alfred Publishing.

The Electronic Musician's Dictionary, by Craig Anderton. Music Sales Corporation.

Arranging / Composition

Jazz Arranging and Composing, by Bill Dobbins. Advanced Music.

Music Notation: A Manual of Modern Practice, by Gardner Read. Taplinger Publishing

Company.

Sounds and Scores, by Henry Mancini. Cherry Lane Music.

The Contemporary Arranger, by Don Sebesky. Alfred Publishing, Inc.

The Professional Arranger Composer, Parts I and II, by Russell Garcia. Criterion Music Corporation.

Computers

Amiga for Beginners. Abacus Software.

Amiga Tips and Tricks. Abacus Software.

Beginner's Guide to the Amiga, by Dan McNeil. Compute! Books.

The Amiga Companion, by Rob Peck. IDG Communications/Peterborough.

The Amiga User's Guide to Graphics, Sound and Telecommunications, by David Myers with programs by Joel Powers. Bantam Computer Books.

chapter twenty-three

practice session

(tutorial)

The following chapter contains a brief glimpse into B&P Pro's wide array of features. Follow along as we introduce you to simple recording, playback, and editing. In order fully to understand and use B&P Pro however, we strongly recommend that you read the preceding chapters thoroughly and carefully.

Getting Started

B&P Pro starts with the Transport Controls and Tracks window open so that you can begin recording immediately.

1) Test whether or not you've implemented MIDI properly.

To do so, do the following:

- * Make sure that the Input Arrow (a red arrow) points to a MIDI In Tool for any Track. By default, the arrow will point to Track 1.
- * Make sure there is a MIDI Out Tool on the Track.
- * Make sure that your sound module or MIDI keyboard receives on MIDI channel 1. If not, change the Output channel to the correct number by clicking on it and moving the mouse to the appropriate channel.
- * Play a note with your MIDI input device - typically a keyboard.

If a note sounds, then you're ready to proceed with this Practice Session. If you hear nothing, check your MIDI set-up to ensure that you've connected things correctly.

The following are common MIDI problems:

- * Bad MIDI cables
- * Improper MIDI input device set-up
- * Incorrect MIDI connections

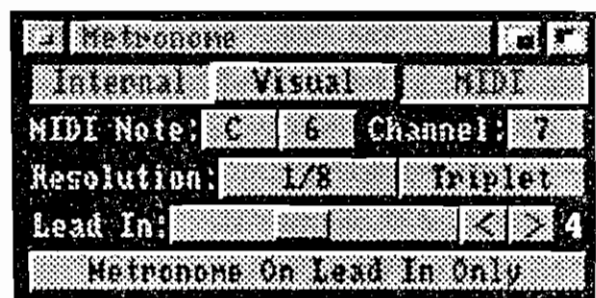
* No amplification source

If you are unfamiliar with the fundamentals of MIDI technology, we strongly recommend that you refer both to your MIDI input device manual and to the MIDI books suggested in Chapter 22, A Reading List.

The Metronome

2) Set up the metronome so that you can hear the beat as you record.

To access the metronome, double-click on the Metronome window's icon. (See Chapter 4.) The Metronome window opens. For this Practice Session, we'll use the Amiga's internal sounds as our click source. Notice that the Internal button is already depressed. (In general, if a button contains red type, it is active; if it contains blue type, then it is inactive.)



3) Change the click resolution from 1/4, or 4 clicks per measure in 4/4 time, to 1/8, or 8 clicks per measure.

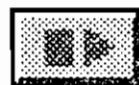
To do so, click on the Note button and select an eighth note from the pop-up menu.

4) Adjust the Lead In: slider to provide two measures of beats before B&P Pro starts to record.

Use the arrows or move the slider so that the number "2" displays.

5) Test the Metronome.

To do so, click on the Transport Controls' Start Button. If your Amiga's internal sounds capability is enabled, you'll hear the metronome.



The metronome conveniently clicks in three different ways: loudest on the first beat of each measure, softer and lower in pitch on each beat within the measure and even softer still on each subdivision of the beat. We designed this feature to enable you to "feel" the beat.

To stop the metronome, click on the Transport Controls' Stop button.



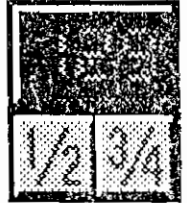
6) Close the Metronome window by clicking on the "close

window" button on the top left side of the window's title bar.

Tempo

7) Set the tempo. By default, B&P Pro sets the tempo at 120 beats per minute. In order to change it, click on the tempo display with the mouse.

If you hold the mouse over either the "1s," "10s," or "100s" column, the numbers will cycle. Holding the mouse on the upper half of the number causes it to increase, while holding it on the lower half causes it to decrease. To select a tempo, do the following:

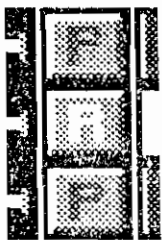


Click on the Start button in the Transport Controls. Immediately, you'll hear the internal metronome. (If you don't hear it, make sure that the internal sounds capability is enabled on your Amiga, your monitor has speakers, and the volume is up.) With the metronome clicking, use the mouse to find a tempo to your liking.

Recording

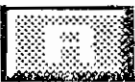
8) Put Track 1 in Record mode.

Do this by clicking on the "P" button once, which causes it to display an "R." Make sure that the Input Arrow points to Track 1.



9) Click on the "R" button in the Transport Controls.

This places the Sequencer into Record mode. You're now ready to record.



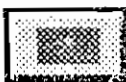
10) Press the Start button in the Transport Controls to begin the metronome Lead In.

After two measures, B&P Pro will begin recording.



11) Play a few measures of music, then click with the mouse on the Stop button in the Transport Controls to stop the recording process.

Once you've recorded a few notes, B&P Pro displays them as small dots in the Sequence Display. (If the Track is highlighted, the dots are blue. If not, the dots are yellow.)



12) Press the Start button to hear your recording and the Stop button to

stop playback.

Tools

13) Open the ToolBox.

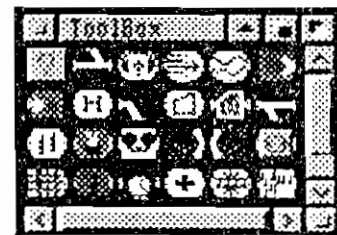
Do so by clicking on the ToolBox icon located on the right side of the screen.



14) Get the Echo Tool.

Do this in one of two ways:

- * Click on the "?" button in the ToolBox and select Echo from the scrolling pop-up menu.



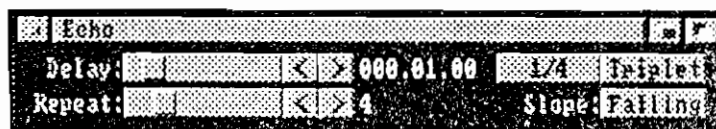
- * Find the Echo Tool icon among the other Tools in the ToolBox, click the mouse button down, and hold it.

15) Drag the Echo Tool to Track 1's Output PipeLine, located to the right of Track 1's Sequence Display.

To drag this Tool, hold it with the mouse while moving the mouse over to Track 1's Output PipeLine. Lift up with the mouse once you've reached your destination.

16) Open the Echo Tool's Control window.

To do so, double-click on the Echo Tool.



17) Change the Echo Tool's delay to "000.00.96."

Do so in one of three ways:

- * Move the Delay: prompt slider to the left or right until the number "000.00.96" appears in the display.

- * Use the Delay: prompt's right and left arrow keys to find the number "000.00.96."

- * Click on the note button, which by default displays "1/4," and select "1/8," the equivalent of "000.00.96," or 96 clocks.

18) Change the Echo Tool's repeat to "1."

Do so in one of two ways:

- * Move the Repeat: prompt's slider until the number "1" appears in the display.
- * Use the Repeat: prompt's right and left arrow keys to find the number "1."

19) If you like, close the Echo Tool's Control window or move it to another location by dragging it.

20) Click on the Start button in the Transport Controls to hear the effect of the Echo Tool on your pre-recorded Track.

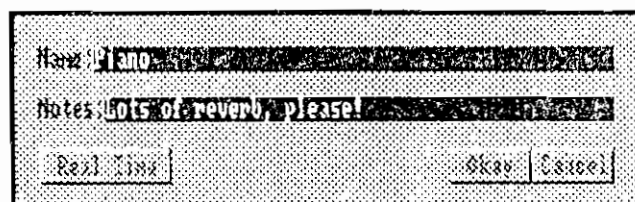
Notice that, even though nothing has changed in the Sequence Display, your Track now plays back with an echo effect.

21) Move a copy of Track 1's Echo Tool to Track 2's Input PipeLine.

To do so, click down on Track 1's Echo Tool with the mouse and drag it to Track 2's Input PipeLine.

22) Rename Track 2.

Do this by double-clicking on the words "Track 2," deleting the words "Track 2" from the Name: prompt and entering a new name. You may also enter something in the Notes: prompt. Once you've entered a new name, click on Okay to accept your changes.



23) Move the Input arrow to Track 2.

Do so by clicking on the grey box to the right of "Track 2."

24) Record on Track 2.

Put Track 1 back into Play mode and put Track 2 into Track Record mode, then follow the same instructions as in steps 9 through 11. Notice that this time, the notes you play pass through the Echo Tool and into the Sequence Display. The Sequence Display actually shows the echo graphically. Tools placed on the Input PipeLine affect notes upon recording. Tools placed on the Output PipeLine affect notes upon playback only.

25) Remove the Echo Tool in Track 1's Output PipeLine.

To do so, click on the Tool with the mouse, then press the Delete key on your Amiga keyboard.

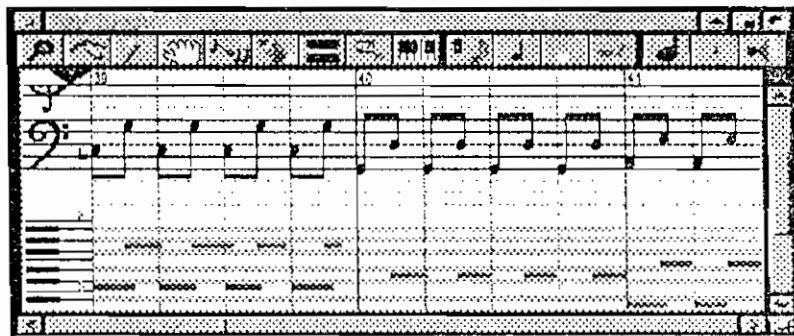
Basic Editing

26) Open Track 1's Edit window.

You can do this in two ways:

- * Double-click on Track 1's Sequence Display.

- * Click once on Track 1's Sequence Display, then press the Return key on your Amiga keyboard.



27) Use the Expansion Gadget to expand the Edit window.

Do this by clicking on the grey triangle on the Edit window's title bar.

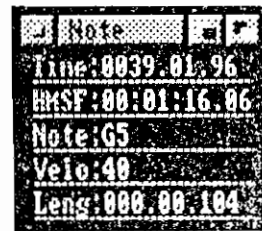
28) Look at a note on either the Piano Roll or Hybrid Staff with the Magnifying Glass.

To do so, click on the Magnifying Glass button, which causes the mouse pointer to take the shape of a Magnifying Glass. Pass the Magnifying Glass over a note and click. As you do so, the note turns red and the Magnify window reveals statistics about that note.



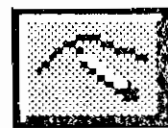
29) Change the velocity of your selected note.

Do this by entering a new number (between 0 and 127) after the Velo: prompt.



30) Draw a new note.

To do so, access the Pencil by clicking on the Pencil button, located to the right of the Magnify button. The mouse resembles a pencil when you select the Pencil button.



Select the note value, modifier, articulation and dynamic level by choosing

from the four Note buttons, then click on the area in the Piano Roll or Hybrid Staff in which you want to draw the note.

31) Lengthen a note.

Do so by selecting the Magic Wand from the Command Buttons. This causes the mouse to resemble a Magic Wand. Click down on the note with the mouse, then drag the mouse to the right, which stretches the note in length.



32) Erase a note.

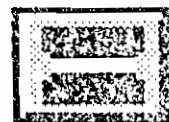
To do this, select the Eraser button from the Command Buttons. Using the Eraser pointer, move the mouse over the note you wish to erase and click. When used in conjunction with the Bounding Box button, the Eraser pointer erases a group of notes.



33) Load a Tool into the ToolPad.

To do this, first reduce the size of the Edit window by either:

- * pressing the Contraction Gadget, the triangle located in the Edit window's title bar, or



- * using the window sizing gadget located in the bottom right corner of the Edit window.

Then, open the ToolBox and drag the Echo Tool into the ToolPad, found in the Command Button strip.

34) Edit the Echo Tool's parameters.

To access the Echo Tool's Control window, either:

- * hold down the Amiga's shift key while clicking on the Echo Tool in the ToolPad with the mouse, or

- * use the Edit PadTool Controls... command found in the Display Options menu of the Edit window.

35) Adjust the Echo Tool in whatever manner suits you.

Then, if you like, close the Echo Tool's Control window.

36) Toolize a note.

To do so, click on the ToolPad with the mouse. As a result, the mouse will resemble a wrench with a note in its “mouth.” Then touch a note with the mouse. Notice that you’ve created an echo with the notes you’ve touched.

37) Save your editing.

Do this by either:

- * clicking on the close window button located on the left side of the title bar, or

- * selecting Update from the Edit menu of the Edit window. (This updates the Sequence Display without closing the Edit window.)

If you are unsatisfied with the changes you’ve made, select Abort from the Edit menu and the Edit window will close without keeping your changes.

38) Save your file.

Select the Save As... command located in the Song menu. A file requester appears. (See Chapter 20.) Save often and make backups! (You never know when a huge elephant might squash your hard drive.)

39) Read the preceding chapters of this manual.

As we mentioned in the beginning of this chapter, this practice session covers only a handful of B&P Pro's long list of features. Read the rest of this manual to get the most out of B&P Pro.

This appendix describes all the Tools included with your B&P Pro release disk. As you may already know, B&P Pro is an expandable music environment. As a result, you will have future opportunities to add more Tools to your system. For instructions on how to install and use Tools, see Chapter 6.

The Format

Each Tool is described in a standard format:

NAME: lists the Tool's name.

DESCRIPTION: explains the Tool's function.

SPECIAL TYPE: identifies the Tool's special features.

An Input Tool is the first Tool on the Input PipeLine. An Output Tool is the last Tool on the Output PipeLine. A Branching Tool can connect to a Merging Tool on another PipeLine. A Merging Tool can receive from a Branching Tool. A MacroTool consists of several Tools assembled with the Create-A-Tool feature.

USAGE: specifies the location, either the PipeLine, a ToolPad, or both, in which a Tool can be used.

CONTROLS: describes the Tool's Control window. Access the Control window by double clicking on a Tool in the PipeLine, or if the Tool is in the ToolPad, by pressing the Shift key and clicking on the ToolPad. If you like, you can edit the Tool's Controls as the Tool processes notes. Some Tools do not have Control windows.

COMPONENTS: gives the names of a MacroTool's component Tools.

REMEMBER: in order for a MacroTool to work, its component Tools must be loaded. This is rarely a problem because you can only create a MacroTool with existing Tools.

B&P Pro loads each MacroTool after loading all of its component Tools.

However, B&P Pro allows you to load a MacroTool that contains component Tools not currently in your ToolBox. Should this happen, B&P Pro alters the MacroTool so that it can run without the missing Tools. Often, this results in a MacroTool so severely lobotomized that it does nothing useful. To rectify the situation, remove the MacroTool with the Remove command in the ToolBox menu, load the component Tools with the Load command, and then reload the MacroTool.

A Listing of Each Tool

NAME: Accompany B

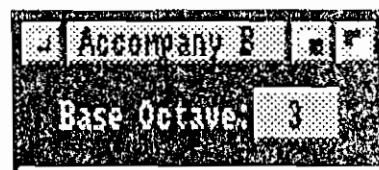
DESCRIPTION: The Accompany B Tool creates a rhythmic accompaniment by matching the Rhythm template and Chords in the Song Parameters. For every beat in the Rhythm, the Accompany B Tool generates a chord that has the accent and duration of the beat. The Accompany B Tool always operates at the beginning of a PipeLine. It passes the notes it creates down the line to be processed by other Tools and recorded in the Sequence.



SPECIAL TYPE: Input.

USAGE: PipeLine.

CONTROLS: Click on the number after the Base Octave: prompt and hold the mouse down. A pop-up menu appears with Octave number choices. To select an Octave, drag the mouse to the Octave number in which you'd like the chord patterns to play and lift up.



NAME: Articulator

DESCRIPTION: The Articulator Tool specifies the durations of all notes which pass through it.



SPECIAL TYPE: None.

USAGE: PipeLine, ToolPad.

CONTROLS: To specify the preset duration, click on the slider to set the articulation in Measures, Beats, and Clocks. Or, select a preset duration by clicking on the button and choosing a note from the pop-up menu.



NAME: Branch Out

DESCRIPTION: The Branch Out Tool sends a duplicate of each event that enters it down a connecting pipe to another PipeLine.



SPECIAL TYPE: Branching.

USAGE: PipeLine.

CONTROLS: None.

NAME: The CounterPoint Tool

DESCRIPTION: Based on first species counterpoint, the CounterPoint Tool creates a counter melody to the notes that pass through it. The CounterPoint Tool uses the Key & Scale / Mode Song Parameters to determine the proper note intervals. If you have not selected a Key & Scale / Mode, the CounterPoint Tool operates in the key of C Major.



SPECIAL TYPE: Branching. If you've connected the CounterPoint Tool to another PipeLine, this Tool sends the counter melody to that PipeLine and passes the original notes directly through. If you don't connect the CounterPoint Tool, then it passes both the original melody and counter melody through the same PipeLine.

USAGE: PipeLine, ToolPad.

CONTROLS: None.

NAME: Delay

DESCRIPTION: The Delay Tool delays MIDI Events by a specified time. It can be used in two ways:



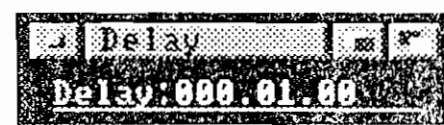
If you connect the Delay Tool to another PipeLine, it sends delayed copies of all MIDI Events to that PipeLine, while it passes the original Events, with their time unchanged, directly through.

If you don't connect the Delay Tool, it delays the original events and passes them down the PipeLine.

SPECIAL TYPE: Branching.

USAGE: PipeLine, ToolPad.

CONTROLS: To set the Delay time, edit the number



appendix a - tools

after the Delay: prompt. Enter the time in measures, beats, and clocks.

NAME: Doctor of Velocity

DESCRIPTION: The Doctor of Velocity Tool specifies the velocities of all notes to a preset value.



SPECIAL TYPE: None.

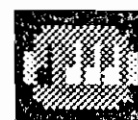
USAGE: PipeLine, ToolPad.

CONTROLS: Drag the Velocity: slider to specify the velocity. The slider displays both the MIDI velocity number and its equivalent musical notation. The velocity ranges from 0, or ppp, to 127, or fff.



NAME: Echo

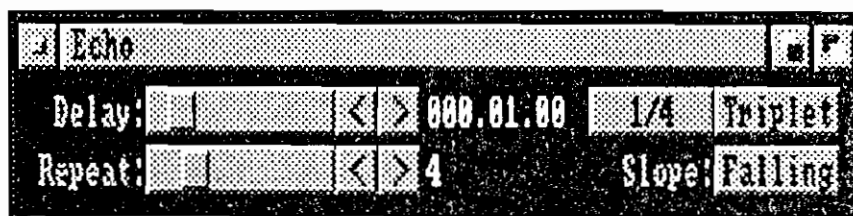
DESCRIPTION: The Echo Tool echoes notes. The echo can increase, decrease, or maintain the current volume level.



SPECIAL TYPE: None.

USAGE: PipeLine, ToolPad.

CONTROLS: Enter the interval between each echoed note after the Delay: prompt in measures, beats, and clocks. Alternately, you can use the note duration pop-up and the Triplet button to the right of the Delay slider to set the delay.



The Repeat: slider sets the number of echoes the tool creates, from 0 to 19. The Slope: button displays whether the echo volume is Rising, Falling, or Level. Click the Slope: button to cycle through the choices.

NAME: Elbow

DESCRIPTION: The Elbow Tool sends all events that enter it to another PipeLine, but does not send them down its own PipeLine.



SPECIAL TYPE: Branching.

USAGE: PipeLine.

CONTROLS: None.

NAME: FeedBack In

DESCRIPTION: In conjunction with the FeedBack Out Tool, the FeedBack In Tool passes events on the output PipeLine of one Track to the input PipeLine of another. Place FeedBack Out on the output PipeLine of the sending Track and place FeedBack In on the input PipeLine of the receiving Track.



CAUTION: Using the FeedBack Tools could create a “feedback loop” in which notes race through the PipeLine, repeatedly, in a circular path. When this happens, B&P Pro's user-interface freezes and none of the buttons respond. To extricate yourself from such a scenario, press vigorously and continuously on the Escape key on your Amiga keyboard to clear the PipeLines.

SPECIAL TYPE: Input. The FeedBack In Tool replaces the MIDI In Tool as the source for the Track's PipeLine.

USAGE: PipeLine.

CONTROLS: None.

NAME: FeedBack Out

DESCRIPTION: Placed on the end of the output PipeLine, the FeedBack Out Tool sends events to a FeedBack In Tool on the input PipeLine of another Track.



SPECIAL TYPE: Output. This Tool replaces the MIDI Out Tool as the destination for events flowing out of the Track's PipeLine.

USAGE: PipeLine.

CONTROLS: None.

NAME: Flip

DESCRIPTION: The Flip Tool flips all notes around a center note, or axis. It measures the interval between each note and the axis, and computes a mirror

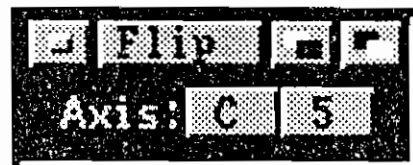


image of the note on the flip side of the axis. Like many Tools, if you've set the Key & Scale in the Song Parameters, it computes an interval in key.

SPECIAL TYPE: None.

USAGE: PipeLine, ToolPad.

CONTROLS: To edit the center note, use the two buttons after the Axis: prompt. Click on the first button, the note letter, to reveal a piano keyboard pop-up menu. Drag the mouse to the desired key and lift up. Click on the second button, the octave, to reveal a menu of octaves. Drag the mouse to the desired octave and lift up.



NAME: Harmony Generator

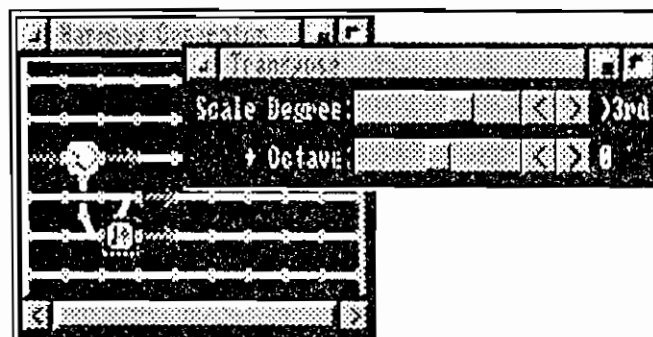
DESCRIPTION: The Harmony Generator Tool, a MacroTool, creates two harmonies for every note it processes. The CounterPoint Tool generates the first harmony which it then feeds into the Transpose Tool, which creates the second harmony.



SPECIAL TYPE: MacroTool

USAGE: PipeLine, ToolPad.

CONTROLS: To edit the harmony created by the Transpose Tool, double-click on its icon to open its Control window. (See the description of the Transpose Tool later in this Appendix.) CounterPointer does not have a Control window.



COMPONENTS: CounterPointer, Transpose.

NAME: Inverter

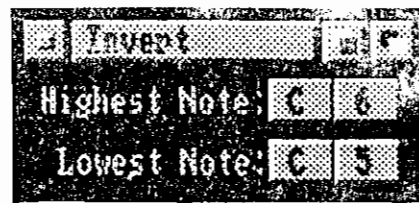
DESCRIPTION: The Inverter Tool squeezes all notes into a preset range, shifting notes that are too low or high.



SPECIAL TYPE: None.

USAGE: PipeLine, ToolPad.

CONTROLS: To edit the preset ranges, Highest Note and Lowest Note, edit both the note and octave. Change the note by clicking down on it with the mouse, to reveal a pop-up menu of a piano keyboard. Drag the mouse to the desired note and lift up. Change the octave by clicking down and selecting the octave from the pop-up menu.



NAME: Keyboard Splitter

DESCRIPTION: The Keyboard Splitter Tool passes all notes at or above a preset split point down the PipeLine. It diverts all notes below that point to another PipeLine.



SPECIAL TYPE: Branching.

USAGE: PipeLine.

CONTROLS: To edit the split point, use two pop-up menus after the Split: prompt. Click on the first part of the split, the note letter, to reveal a piano keyboard menu. Drag the mouse to the desired key and lift up. Click on the second part, the octave, to reveal a menu of octaves. Drag the mouse to the desired octave and lift up.



NAME: Loop

DESCRIPTION: The Loop Tool records and plays a looped section of music. When recording, it layers new notes on top of previously recorded notes. For playback, the Loop Tool provides three modes:



In Free Run mode, the looped section starts playing at a predefined start point, and repeats a user-selected number of times.

In Riff mode, an incoming note triggers the looped section to play immediately. If multiple overlapping notes enter, the Loop Tool plays multiple overlapping copies of the looped section. This comes in handy with the Tranpose and Modulate options. (See below.)

In Trigger mode, a specific incoming note triggers the looped section to play immediately. The Tool ignores all other notes.

The Loop Tool provides two options for shifting the pitch of playback under user control:

The Tranpose option shifts the looped section up or down in key. The Loop Tool

determines the transposition by measuring the distance between a user-specified root note and the entering note. For example, if the root note is set at C5 and then C6 enters, the Loop Tool plays the sequence transposed up one octave. It shifts each note in key, abiding by the user-specified Key & Scale/Mode in the Song Parameters.

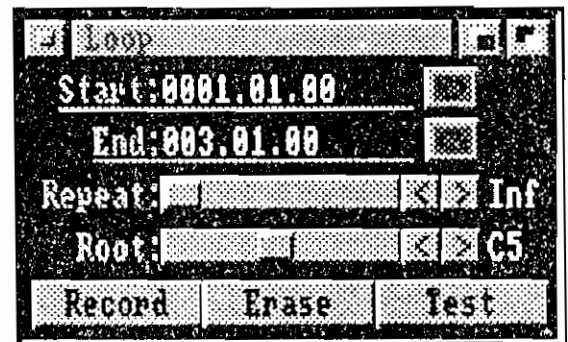
The Modulate option shifts the looped section up or down a constant distance determined by the difference between the note entering the Tool and the user-specified root note. The Modulate option ignores the user-specified Key & Scale/Mode.

When combined with the three playback modes, the Tranpose and Modulate options provide a rich set of options for real-time performance and composition.

SPECIAL TYPE: None

USAGE: PipeLine.

CONTROLS: Enter the beginning and ending times for the loop in the Start: and End: fields. Alternatively, drag the Loop Flags in the Tracks window to the desired loop begin and end locations, then click on the loop buttons to the right of the Start: and End: fields.



The Repeat: slider determines how many times the Tool plays its loop. Select Inf (loop forever), or 1 through 99.

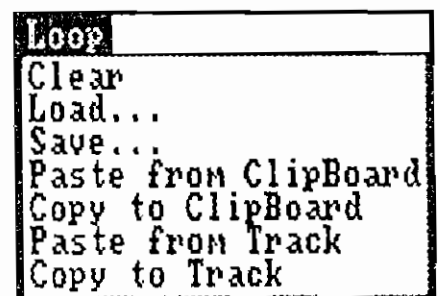
The Root: slider selects the root note for the Transposition and Modulate options as well as the trigger note for Trigger mode.

The Record button places the Loop Tool in Record mode. Click on it, then start B&P Pro. The looped section plays as if in Free-Run mode. Add to the looped section by playing along. The Loop Tool merges the new notes into the looped section.

To erase individual notes while recording, click on the Erase button, then play the notes you wish to erase, holding them down long enough to overlap with the originals. Turn off Erase by clicking again. The erased notes should stop playing.

To listen to the looped section without running B&P Pro, click on the Test button.

The Loop Menu provides commands for erasing, storing, and retrieving loops.



CLEAR: erases the loop.

LOAD: loads a previously saved loop from disk.

SAVE: saves the loop to disk.

PASTE FROM CLIPBOARD: replaces the notes in the loop with the currently selected Clip in the ClipBoard.

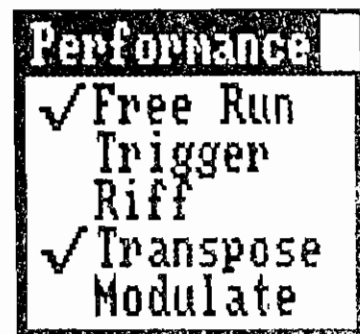
COPY TO CLIPBOARD: copies the looped section into a new Clip and places that in the ClipBoard.

PASTE FROM TRACK: replaces the notes in the Loop Tool with the section of notes between the Start: and End: times in the Track. It also erases the same section in the Track so that the Loop Tool and sequencer don't overlap during playback.

COPY TO TRACK: copies the looped section from the Loop Tool into the Track, placing it between the Start: and End: times. To edit a loop, select Copy to Track, then use the Sequence Editor to alter the loop to your liking. When done, use Paste from Track to return the loop to the Tool.

The Performance menu determines the behavior of the Loop Tool's performance.

The default selection, Free Run, plays the loop, starting when playback reaches the Start: time and playing as many times as specified in the Repeat: slider. In addition, if either Transpose or Modulate is selected, it tracks new notes that enter the Loop Tool and shifts the melody up or down as it plays.



With Trigger selected, the Loop Tool plays the looped section immediately when it receives the note specified in the Root slider.

With Riff selected, the Loop Tool plays the looped section every time it receives a new note. If Modulate or Transpose are selected, the Loop Tool plays the sequence shifted up or down by the distance between the new note and the root note (set with the Root slider).

With Transpose selected, the Loop Tool shifts the looped section, in key, up or down the transposition defined by the interval between the incoming note and the Root: note. This applies to Free Run and Riff modes, but not Trigger mode.

With Modulate selected, the Loop Tool shifts the playback pitch, not in key, up or down the exact distance between the incoming note and the root note. Once again, this applies to Free Run and Riff modes, but not Trigger mode.

NAME: Merge In

DESCRIPTION: Use the Merge In Tool in conjunction with all branching Tools to connect PipeLines vertically. Although many different Tools can send events down a branch, only the Merge In Tool can receive them.



SPECIAL TYPE: Merge.

USAGE: PipeLine.

CONTROLS: None.

NAME: MIDI In

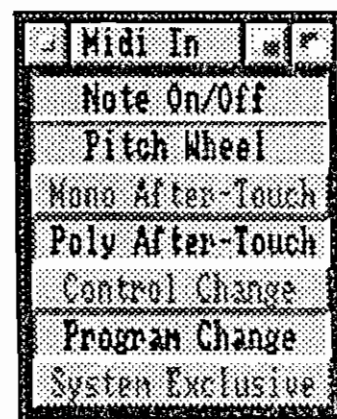
DESCRIPTION: The MIDI In Tool receives MIDI events entering the Amiga's serial port and passes them down the PipeLine.



SPECIAL TYPE: Input.

USAGE: PipeLine.

CONTROL: To determine which MIDI Events enter the PipeLine, select the appropriate MIDI Event buttons. Remember that all MIDI Events eat up memory when recorded; avoid selecting MIDI events for which you have no purpose. Additionally, the MIDI In Tool sets aside a memory buffer for System Exclusive events. If you are running low on memory and are not recording System Exclusive, be sure to turn it off.



The System Exclusive capability of the MIDI In Tool is designed for the reliable real time recording of short System Exclusive packets, such as filter parameters and the like, not larger System Exclusive packets, such as patch banks which are much bulkier and often require handshaking.

NAME: MIDI Out

DESCRIPTION: The MIDI Out Tool transmits MIDI events through the Amiga's serial port.



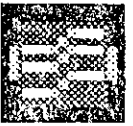
SPECIAL TYPE: Output.

USAGE: PipeLine.

CONTROLS: To determine which MIDI Events exit the PipeLine, toggle on or off the MIDI Event buttons.

NAME: Modulator

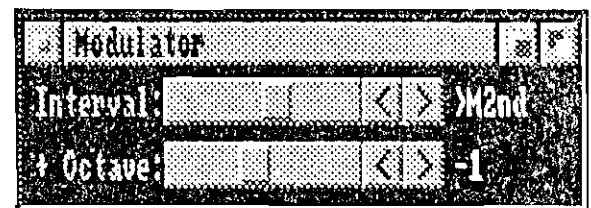
DESCRIPTION: The Modulator Tool shifts all notes up or down in pitch by a specified amount. This feature is useful for shifting music from one key to another, as well as for bumping notes up or down octaves. The Modulator Tool differs from the Transpose Tool in that it does not force the notes to stay in key when it shifts them. Instead, the shift is purely linear and all note-to-note relationships are kept the same.



SPECIAL TYPE: None.

USAGE: PipeLine, ToolPad.

CONTROLS: To determine the note shift, specify the interval and octave. The former, Interval:, specifies the modulation distance within the octave. The range extends down a major seventh and up a major seventh. If you want a modulation which is greater than an octave, use the second slider, Octave Shift:, to determine, in addition to the interval, the number of octaves up or down.



NAME: Note Filter

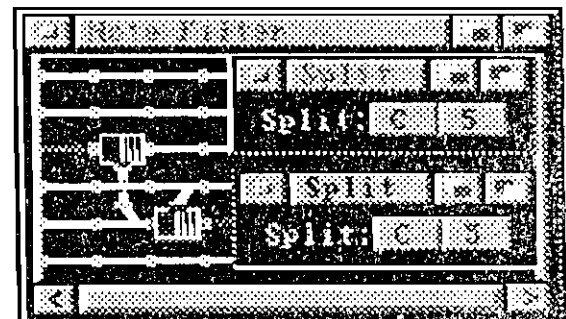
DESCRIPTION: The Note Filter Tool allows only notes within a preset range to pass through.



SPECIAL TYPE: MacroTool.

USAGE: PipeLine, ToolPad.

CONTROLS: The Note Filter Tool consists of two Keyboard Splitter Tools. The first Keyboard Splitter Tool specifies the upper limit. It sends notes below the split point to another PipeLine. The second Keyboard Splitter Tool determines the lower limit, and passes notes above that split point to the output of the Macro. To edit either limit, double click on its Keyboard Splitter icon and edit it as you would for the Keyboard Splitter Tool.



COMPONENTS: Keyboard Splitter.

NAME: Phrase Shaper

DESCRIPTION: Applying the Dynamics curve in the Song Parameters to each note, the Phrase Shaper Tool sets the note velocity appropriately.



SPECIAL TYPE: None.

USAGE: PipeLine, ToolPad.

CONTROLS: Create a Dynamics curve in the Editor to guide the Phrase Shaper Tool.

NAME: Plug

DESCRIPTION: Throws away everything entering the Plug. Place a Plug in the Input PipeLine to discard anything entering this pipe. Place a Plug in the Output PipeLine to mute the Track permanently. Plugs are also useful for use with Branching Tools, when you only want one of the two outputs.



SPECIAL TYPE: None.

USAGE: PipeLine.

CONTROLS: None.

NAME: Quantize

DESCRIPTION: The Quantize Tool conforms the timing of notes to a preset resolution. This Tool shifts notes to the closest note boundary ranging from a 1/64 note to a whole note, with or without a triplet modifier. Use this Tool to tighten up parts that you haven't entered with rhythmic accuracy.



Aside from tightening the rhythm section of your song, many other uses for the Quantize Tool exist. Different styles of music will dictate different “feels.” Notes quantized directly on the beat are said to be “in the groove” or “in the pocket.” Notes quantized before or ahead of the beat tend to anticipate or “push the beat,” and can add tension to your song. Finally, notes quantized after or behind the beat tend to add a “laid back” or relaxed feel to your song. The Quantize Tool will allow you to quantize notes in any of the above ways, or anywhere in between.

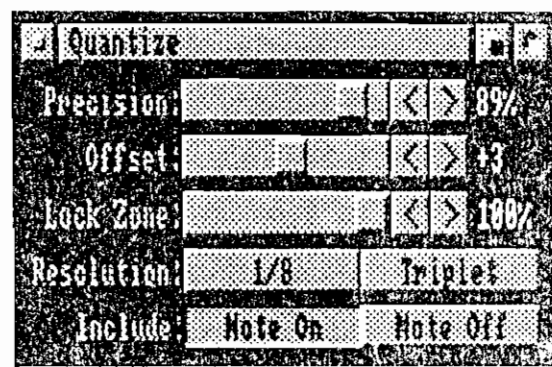
You can quantize notes either while you are recording them, by placing the Quantize Tool on the Input PipeLine, or after recording is completed, sometimes called “Auto-Correct,”

by placing the Quantize Tool on the Output Pipeline or by "Toolizing" your song with this Tool.

SPECIAL TYPE: None.

USAGE: PipeLine, ToolPad.

CONTROLS: To set the note resolution, select the note value, and modifier, if desired, after the Resolution: prompt. The resolution consists of two pieces of information: a note value from 1/64 to a whole note and a Triplet modifier. Select a note value by clicking down in the note value box and dragging the mouse up or down the pop-up menu. Lift up on your selection. To turn the triplet modifier on or off, click on it. The note resolution determines to which note boundary Quantize shifts your notes.



The Precision: slider determines the effectiveness of the Quantize Tool, or how close to the note boundary you want your notes to shift. The slider ranges from 0% on the left to 100% on the right. Drag the slider all the way to the right and the Quantize Tool repositions notes exactly to multiples of the resolution. Drag it all the way to the left and Quantize does nothing. In most case, dragging it somewhere in the middle works well: although your music becomes more accurate in its timing, it still retains a human feel. All notes will be shifted closer to the note boundary selected, but will not be placed directly on that boundary. Remember that this slider does not determine which notes should be quantized, but only how close to the note boundary they should be shifted.

The Offset: slider determines whether the quantization should be ahead of, behind, or right on the beat. Set this control to your preference. The slider values are -50 full left, +50 full right, and 0 in the middle. Negative values quantize ahead of the beat; positive values quantize behind the beat; and 0 quantizes directly on the beat. The greater the offset, the more the note will be quantized ahead of or behind the beat. In this way you can have your music "in the groove," "pushing the beat," "laid back," or anywhere in between.

The Lock Zone: slider determines the area around the resolution value that the Quantize Tool affects. If you play a note outside the lock zone, the Quantize Tool ignores it. If you play a note inside the lock zone, it is quantized. The slider ranges from 0% on the left to 100% on the right. The larger the percent, the larger the lock zone around the note boundary, and hence the more notes that will be quantized.

Drag the Lock Zone: slider all the way to the left and no notes will be quantized. Drag it all the way to the right and all notes are quantized. Drag it between the extremes to set lock zones of varying sizes. Use this feature to ensure that the Quantize Tool affects only the notes you want. For instance, if you set the slider to 50%, and quantize to an 1/8 note resolution, then only notes that are a 1/16 note or closer to each 1/8 note boundary will be quantized;

notes farther than a 1/16 note away from that boundary won't be quantized.

REMEMBER: This slider determines which notes should be quantized, but has no bearing as to where they will be quantized.

The Include: buttons determine whether the Quantize Tool affects Note On, Note Off, or both of these events. Although it's possible to turn both options off, this yields the Quantize Tool ineffective. Click on either Note On or Note Off to toggle each independently of the other.

The Quantize Tool treats events differently in the ToolPad than it does in the PipeLine. In the PipeLine, B&P Pro breaks a note into one Note On and one Note Off event. As a result, Quantize cannot relate a Note Off event to a corresponding Note On event. When you select Note On only, the Quantize Tool shifts the Note On event but leaves the Note Off event alone. As a result, if the shift is dramatic, the change in the note's duration is also dramatic. This can be noticeable with short, staccato notes.

In the ToolPad, the one note holds both the Note On and Note Off events. In this case, if you select only Note On quantization, the Quantize Tool shifts the Note Off the same distance it shifts the Note On. In other words, the note retains its exact duration.

REMEMBER: It's possible to quantize a Note On so that it occurs after the Note Off. This results in a stuck note. Be careful when Quantizing very short notes to a large resolution.

Note Off quantization works the same whether the Quantize Tool sits on the PipeLine or a ToolPad. If you select Note Off only, then the ending time of the note will be shifted to the Note Resolution boundary and the starting time will remain in place. If you select both Note On and Note Off, the starting time and ending times of the note will be shifted to the closest note boundaries. If you have a note of short duration, it's possible that the closest note boundary for both the starting and ending times of the note will be the same. In this instance the note will shrink to a barely audible blip of sound.

NAME: Reverser

DESCRIPTION: The Reverser Tool reverses in time all MIDI Events between the Edit Flags. It makes the sequence play backwards.



SPECIAL TYPE: None.

USAGE: ToolPad.

CONTROLS: None. Remember to specify the Edit Flags around the region to be reversed.

NAME: Sforzando

DESCRIPTION: Use the Sforzando Tool to create a Sforzando, Sforzando Piano, or Sforzando Crescendo effect. Sforzando accomplishes these effects by sending a stream of Poly After-Touch events on the heels of every note.

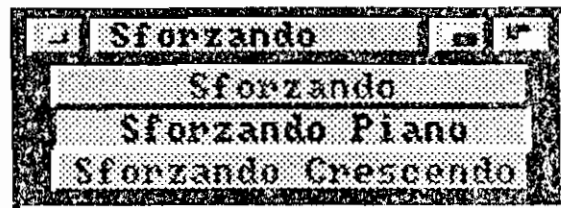


"Sforzando" is a loud emphasis at the beginning, followed by a rapid reduction in volume to a medium level. "Sforzando Piano" is a loud attack that decreases to a quiet level. "Sforzando Crescendo" is a loud attack that first decreases to a quiet level, then increases gradually to full volume. Your MIDI device must support Poly After-touch for this to work.

SPECIAL TYPE: None.

USAGE: PipeLine, ToolPad.

CONTROLS: To choose the effect you'd like, click on the appropriate button in the Sforzando Control window.



Name: Subdivider

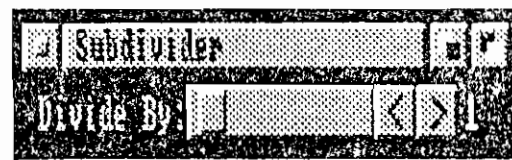
DESCRIPTION: The Subdivider Tool divides a note into smaller notes by a preset fraction. For example, it breaks a whole note into half-note triplets, when you set the subdivision fraction to three.



SPECIAL TYPE: None.

USAGE: ToolPad.

CONTROLS: To specify the subdivision fraction, drag the "Divide By" slider left or right, (e.g. to break all notes into triplets, set the slider to "3.")



Name: Transpose

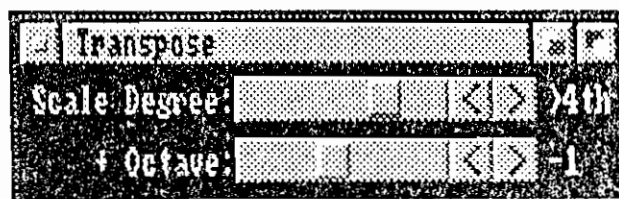
DESCRIPTION: The Transpose Tool shifts notes by a preset interval within the chosen key.



SPECIAL TYPE: None.

USAGE: PipeLine, ToolPad.

CONTROLS: To set the shift, determine the interval within the octave (anywhere from -7th to +7th) and, if necessary, the octave transposition. Drag the Scale Degree: slider to



appendix a - tools

set the transposition within the octave. Drag the Octave: slider to set the octave transposition.

Name: Triad

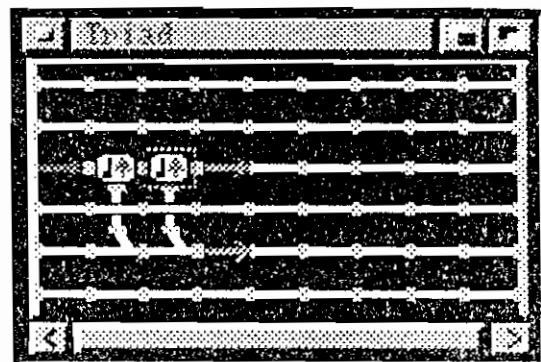
DESCRIPTION: The Triad Tool creates a chord by playing two notes above any notes that enter.



SPECIAL TYPE: MacroTool.

USAGE: PipeLine, ToolPad.

CONTROLS: The Triad Tool, a MacroTool, consists of two Transposers, one set to shift up a third, the other, to shift up a fifth. To create a different chord configuration, edit the Transpose Tools by double clicking on their icons. For example, to create a chord inversion, alter the second Transpose Tool to shift down a fourth, instead of up a fifth.



COMPONENTS: Transpose.

Name: UnQuantize

DESCRIPTION: The UnQuantize Tool alters the timing of notes by a random amount, which gives quantized music a less mechanical feel.



SPECIAL TYPE: None.

USAGE: PipeLine, ToolPad.

CONTROLS: When you move the slider all the way to the left, the UnQuantize Tool does nothing. When you move it all the way to the right, the Unquantize Tool shifts notes large random distances, up to a sixteenth note apart. As you move the slider from left to right, the Tool shifts notes greater and greater random distances. The slider ranges from 0% on the left to 100% on the right.

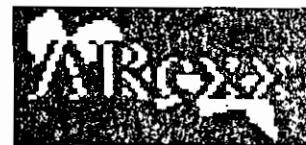


appendix b accessories

Accessories enhance B&P Pro's built-in capabilities. Run from the Accessories window, they provide additional features. Because, like Tools, they are not an integral part of B&P Pro and can be expanded as your system grows, we describe the Accessories that come with B&P Pro in this Appendix. For instructions on how to install Accessories and access the Accessories window, see Chapter 18.

The ARexx Accessory

The ARexx Accessory receives ARexx commands which instruct B&P Pro to load, play, start, stop, and synchronize music, all under the control of other Amiga applications.



To install the ARexx Accessory, use the Load command found in the Accessories menu. From then on, it will be active every time you run B&P Pro. The ARexx Accessory has no Control Window.

In order for the ARexx Accessory to work, you must have ARexx (by William Hawes) installed in your computer, including the ARexx libraries. Also, the REXXMast program must be running. Many people place the REXXMast command in their startup sequence to make it a permanent part of their Amiga environment; we suggest you do this as well.

The ARexx Accessory receives commands addressed to "Bars&Pipes ARexx". Each ARexx command is followed by an optional set of parameters. Many commands receive time information in SMPTE, Beats & Measures, or MIDI Clocks. The first parameter is "BEAT" or "SMPTE" or "CLOCK", so as to indicate the time information. The second parameter is the actual time in the specified format. For example, to locate a particular point in the Song, three different commands may be issued:

```
LOCATE BEAT measure.beat
```

```
LOCATE SMPTE hour.minute.second.frame
```

```
LOCATE CLOCK midiclock
```


EXAMPLE:

```
ADDRESS "Bars&Pipes ARexx" LOCATE BEAT 1.4  
ADDRESS "Bars&Pipes ARexx" LOCATE SMPTE 0.0.23.12  
ADDRESS "Bars&Pipes ARexx" LOCATE CLOCK 300
```

The BEAT time parameter is in measures and beats. The SMPTE time parameter is in hours, minutes, seconds and frames. The CLOCK time parameter is in MIDI clocks. There are 24 MIDI clocks per quarter note, while B&P Pro thinks in terms of 192 clocks per quarter note. By using the MIDI standard, we stay consistent with other applications.

Here is a description of each command:

To load a Song, replacing the currently loaded Song:

OPEN SONG filename

EXAMPLE:

```
ADDRESS "Bars&Pipes ARexx" OPEN SONG "Time.Song"
```

To save the currently loaded Song to the selected file:

SAVE SONG filename

To preload a performance for later installation:

PRELOAD filename

EXAMPLE:

```
ADDRESS "Bars&Pipes ARexx" PRELOAD "rock.song"
```

To replace the current Song with a preloaded one:

INSTALL filename

EXAMPLE:

```
ADDRESS "Bars&Pipes ARexx" INSTALL "rock.song"
```

To locate to a specific position in the Song:

LOCATE BEAT/SMPTE/CLOCK time

To read the current position, use the same command with no time parameter:

LOCATE BEAT/SMPTE/CLOCK

To start playback at the current position in the Song:

START

To start playback at a specific point:

START BEAT/SMPTE/CLOCK time

To stop playback immediately:

STOP

To start playing and recording at the current position:

RECORD

To start recording at a specific point:

RECORD BEAT/SMPTE/CLOCK time

To enter record mode (whether or not playing):

PUNCHIN

To exit record mode (but keep on playing):

PUNCHOUT

To bring the B&P Pro screen to the front:

TOFRONT SCREEN

To put the B&P Pro screen to the back:

TOBACK SCREEN

To wait until the Song reaches a specific point, forcing the ARexx caller to synchronize with B&P Pro:

WAIT BEAT/SMPTE/CLOCK time

To set the SMPTE frame type:

FRAME 24/25/29/30

To read the SMPTE frame type:

FRAME

To read the current tempo:

TEMPO

A sample ARexx script that uses these commands is included in the Examples drawer of the B&P Pro disk.

WARNING: If you are using B&P Pro in conjunction with Deluxe Video III, you must run B&P Pro first, then Deluxe Video. Otherwise, you may experience a loss of timing. For playing MIDI files under ARexx control, we recommend the Bars&Pipes MIDI Player.

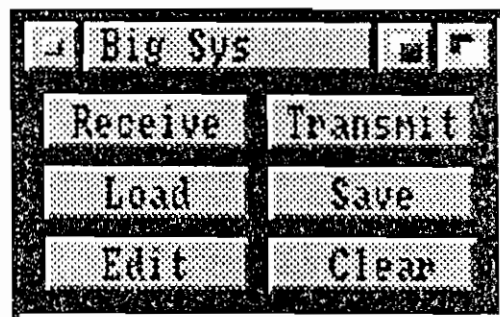
Big Sys - A Generic Patch Librarian

Big Sys receives and transmits MIDI System Exclusive events. Useful for saving and sending patch banks to your synthesizer, it transmits the data when you first load a song, rather than every time the sequence plays. Big Sys provides options for receiving, transmitting, editing, loading and saving System Exclusive packets that do not require handshaking and are up to 65,535 bytes in length.



To open the Big Sys control window, double click on the Big Sys icon.

RECEIVING: To capture a System Exclusive packet, click on the Receive button. Big Sys will wait until a System Exclusive packet arrives in the standard MIDI In port. Go to your synthesizer and execute the System Exclusive transmit command. (Please see your synthesizer manual for the appropriate instructions.) Big Sys will wait patiently until the System Exclusive packet arrives.



TRANSMITTING: To send the System Exclusive packet out the standard MIDI Out connector, click on the Transmit button.

LOADING: To read a previously saved SysEx packet from disk, click on the Load button to open the File Requester. When you load a song from B&P Pro's Song menu, Big Sys automatically loads and transmits the SysEx packet previously saved as part of the song.

SAVING: To open B&P Pro's file requester and save the System Exclusive packet to disk, click on the Save button. When you save the current song with the Save command in B&P Pro's Song menu, Big Sys saves the System Exclusive packet as part of the song.

REMEMBER: Saving the System Exclusive packet as part of the song can increase the size of the song file dramatically.

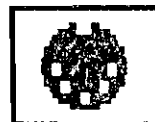
EDITING: Once you have received or loaded a System Exclusive packet, you may wish to edit it. To open the standard B&P Pro System Exclusive requester, click on the Edit button. (See Chapter 12.)

REMOVING: To erase the current System Exclusive packet, click on the Clear button. Erasing in this manner frees memory.

REMEMBER: If you don't want a System Exclusive packet saved as part of your song, you must erase it with the Clear command.

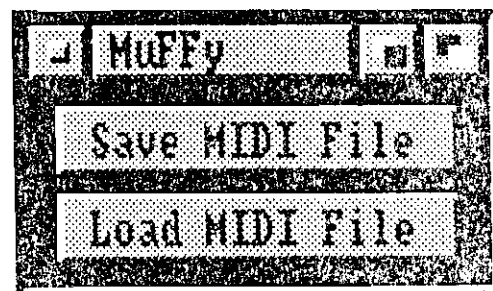
MuFFy - a MIDI File Format Converter

MuFFy translates your B&P Pro composition into standard MIDI File Format and converts MIDI Files into the B&P Pro format. Three MIDI File formats exist: #0, #1, and #2. MuFFy supports only #1, designed for multitrack sequencing. In addition to all MIDI voice events, MuFFy translates Key Signature, Time Signature, Lyrics and Track Names and Notes. The MIDI File Format, however, does not include information unique to B&P Pro, such as Tools, Dynamics, Rhythms, and A-B-A sections.



To access MuFFy's controls, double-click on the MuFFy icon.

MuFFy is extremely useful for transferring songs between B&P Pro and other programs. For example, another MIDI studio may run with a "Mac," PC, and Atari ST. In conjunction with Central Coast Software's Dos-2-Dos and Mac-2-Dos utilities, use MuFFy to port music recorded on other machines with other software, into B&P Pro and vice-versa.



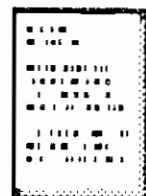
SAVING: To save the song currently loaded in B&P Pro to MIDI File Format, double click on MuFFy in the Accessories window. The MuFFy window opens. Click on the Save MIDI File button. The standard B&P Pro requester opens. Notice an additional field called "Type," which describes the extension placed on the end of the file. The normal MIDI File extension is ".mid," but some programs may require something else. If you are sending the MIDI Files to a program that expects a different extension, for example, "midi," edit the extension after the Type: prompt. Once you have selected a file name, click on Save and MuFFy saves your composition in MIDI File Format.

LOADING: To load a MIDI File Format song into B&P Pro, double click on MuFFy in the Accessories window. Click on the Load MIDI File button. The standard B&P Pro requester opens. Notice that there is an additional field called "Type," which describes the extension placed on the end of the file. The normal MIDI File extension is ".mid", but some programs may use something else. If you can't find the song for which you are looking, erase the extension by clicking on it and pressing the delete key. Then press Carriage Return, or Enter. The File Requester displays all files, regardless of extension. Select a file and click on the Load button. MuFFy loads the MIDI File Format composition into B&P Pro.

In MIDI File Format, B&P Pro's first Track, rather than the Master Parameters window, contains the time and key signature changes, plus the lyrics. Most likely, you will want them in the Master Parameters, where they influence the entire song, rather than in only one Track. To transfer them to the Master Song Parameters, enter the first Track's Sequence Editor and use the Export command to send these Parameters to the Master Song Parameters. You can erase or delete Track 1.

Follow The Leader - A Basic Lead Sheet Printer

Follow The Leader takes advantage of the higher level information you can place in your B&P Pro compositions, in particular, Lyrics, Chords and A-B-A Sections, and prints a lead sheet with Lyrics and Chords.



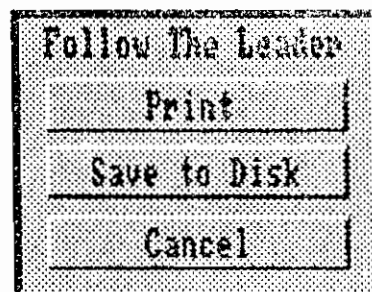
Your composition must follow a few rules in order to be printed intelligibly by Follow The Leader:

- * It must have lyrics.
- * Lyrics and chords must be placed in the Master Parameters window, not in those Parameters of an individual Track.
- * Your lyrics must be punctuated properly: to signify the end of a line, use periods, exclamation points and question marks.

Double click on the Follow The Leader icon. Doing so opens the Follow The Leader

requester, which displays three choices: Print, Save to Disk, and Cancel.

PRINT: To print the Lead Sheet, click on Print. Make sure to set the Amiga's Preferences properly. Of course, the printer must be connected for Follow the Leader to do its thing.



SAVE TO DISK: To save your lyrics and chords to a file so that you can load them into a word processor, click on the Save To Disk button. Doing so opens the B&P Pro File Requester. Select or enter a file name, then click on Save to save your song to that file.

CANCEL: If you change your mind and do not want to use Follow the Leader, click on Cancel.

For every line in your song, Follow The Leader prints two lines. The top line displays the chords. Follow the Leader indicates every beat with either a chord or hash mark. The bottom line displays the lyrics, in time with the chords.

If you've placed A-B-A sections in your song, Follow The Leader prints each section prefaced by its name. It then breaks the song into its component verses, choruses, etc.

Phantom - Software for the Phantom SMPTE Interface

The Phantom Accessory communicates with the Phantom SMPTE interface from Dr. T's to provide direct SMPTE support through hardware rather than through MIDI Time Code.



INSTALLING: You must have the Phantom interface and software installed in your machine before loading the Phantom Accessory into the Accessories window. (Please read your Phantom manual for instructions.)

SYNCHRONIZING: The Phantom Accessory synchronizes B&P Pro to SMPTE automatically. Leave the Timing Source, selected via the Timing menu, set to Internal, not MIDI Clocks or MIDI Time Code. Set the SMPTE Offset appropriately so that B&P Pro will start playing at the correct SMPTE time. Start your VCR, multi-track recorder, or other SMPTE source and the Phantom Accessory will lock to the incoming SMPTE and start B&P Pro playing at the right point.

REMEMBER: Leave the Timing Source set to Internal. (See above.)

STRIPING: If you need to use the Phantom to record a SMPTE signal on tape, double click on the Phantom icon. The Phantom control window opens in the Workbench screen. Follow the instructions in your Phantom manual for recording the SMPTE stripe. When done,

close the Phantom control window and return to B&P Pro by clicking on the screen-to-back button at the top right of the Workbench screen.

appendix c the add-on series

Congratulations! You just purchased a powerful MIDI sequencer that expands as you grow as a musician. Bars&Pipes Professional's open-ended design provides you with limitless musical possibilities and ideas. The Bars&Pipes Add-on Series features dozens of new Tools and Accessories designed to enhance Bars&Pipes Professional's long list of capabilities. All items in the Add-on Series are fully documented and easy to install. So, look through the following descriptions, make your choices, and call us to order by phone or mail.

Music Box A Full of Tricks and Techniques

MusicBox A opens new doors in computer composition. From the musical to the technical, MusicBox A features the following:

ACCOMPANY B+ (Tool), which, which, which creates sophisticated accompaniments using chords and rhythms.

AMAZING GRACE NOTES (Tool), which, which, which performs grace notes and turns.

AREXX IN (Tool), which, which, which captures and transmits ARexx scripts through the PipeLine.

BYPASS RECEIVE (Tool), which, which, which works in tandem with Controlled Bypass Send and Timed Bypass Send.

COMPRESSOR/LIMITER (Tool), which, which, which compresses MIDI controller and event data.

CONTROLLED BYPASS SEND (Tool), which, which, which turns other Tools on and off via a specified MIDI controller.

EVENT CONVERTER (Tool), which, which, which translates one form of MIDI event to another type.

EVENT FILTER (*Tool*), which, which, which removes or redirects unwanted MIDI events.

GLISSANDO (*Tool*), which, which, which includes dozens of glissando combinations.

MIDI METER (*Tool*), which, which, which displays numerically all incoming or outgoing MIDI events.

QUICK PATCH (*Tool*), which, which, which selects program changes from the PipeLine.

REPEAT (*Tool*), which, which, which infinitely repeats incoming data for recording or improvisation.

STEREO DOUBLER (*Tool*), which, which, which adjusts the delay and relative velocity of two voices that share the same MIDI data, resulting in a richer sound.

THE FLASHER (*Tool*), which, which, which illuminates according to the data flowing through it.

TIMED BYPASS SEND (*Tool*), which, which, which turns other Tools on and off during specified points in a Track.

TRILL (*Tool*), which, which, which provides five different types of trills, including modern and lower apoggiatura.

TRUE COLORS (*Accessory*), which allows B&P Pro's screen colors to be altered.

UNSTICK (*Tool*), which, which, which removes hung notes caused by external MIDI instruments.

MusicBox B

Do The Features Ever End?

In efforts to make Bars&Pipes Professional the most fully-featured music program available to humankind, The Blue Ribbon SoundWorks has released another member of its Bars&Pipes Add-on Series: MusicBox B. In it, you'll find:

ALTERNATOR (*Tool*), which, which, which sends every other note to a different Track.

ARPEGGI-8 (*Tool*), which, which, which allows you to create arpeggios, drum patterns and strumming effects.

CHORD PLAYER (Tool), which, which, which plays chord changes entered via the Song Parameters.

4 CHECKPOINT MIDI INS AND 4 CHECKPOINT MIDI OUTS (Tools), which in conjunction with The Serial Solution provides 80 separate MIDI channels for B&P Pro.

CURRENT EVENTS (Accessory), which updates external MIDI devices on events which precede the Song Pointer.

DISK JOCKEY (Accessory), which loads an unlimited amount of B&P Pro files for performance use.

EVENT SCRUBBER (Tool), which, which, which eliminates duplicate MIDI events.

KEY FILTER (Tool), which, which, which prohibits note entry outside the specified key & scale/mode.

MTC-1 CONTROLLER (Accessory), which controls the Fostex R8 Recorder.

NOTEPAD (Tool), which, which, which allows you to keep notes stored in a notepad on any PipeLine.

PAN (Tool), which, which, which provides automated pan control for each Track.

VELOCITY MODIFIER (Tool), which, which, which scales velocity in a relative manner.

VOLUME (Tool), which, which, which provides automated volume control for each Track.

The Multi-Media Kit

Bars&Pipes Professional Steps into the Future

As the Amiga emerges as the leading multi-media platform, The Blue Ribbon SoundWorks, Ltd., is right alongside with its Multi-Media Kit for Bars&Pipes Professional. With the Multi-Media Kit, Bars&Pipes Professional can control other programs, communicate with other programs, and receive detailed instructions from other programs quickly and easily. The Multi-Media Kit includes the following Tools and Accessories:

AREXX (Accessory), which receives ARexx commands to control and synchronize Bars&Pipes, and can be used with any program capable of ARexx commands.

BARS&PIPES MIDI PLAYER (separate program), which performs B&P Pro music under user and/or ARexx control and synchronization.

BARS&PIPES MIDI RECORDER (*Tool*), which, which, which records Bars&Pipes music for use with the MIDI Player.

CUE CARD (*Accessory*), which uses MIDI events to cue animation and graphics via Arexx and simulated keystrokes.

SMOOSE (*Accessory*), which converts B&P Pro files into SMUS files and vice-versa.

With The Multi-Media Kit, you can coordinate your music with other Amiga applications, including Elan Performer, Deluxe Video III, CanDo, AmigaVision, Deluxe Music Construction Set, Sonix, and Digi-Paint 3, just to name a few.

The Internal Sounds Kit Or, What's An AmigoPhone????????

Contrary to popular belief, an AmigoPhone is NOT a program that lets you order burritos by modem. It's not even a Mexican dressed as Ma Bell for a Halloween party. In is, in fact, part of the Internal Sounds Kit. With the Internal Sounds Kit, you no longer need MIDI to compose and create. The Internal Sounds Kit provides the keyboard, the instruments and the player. Included, you'll find:

SPARE KEYS (*Tool*), which, which, which allows you to enter notes with the mouse or Amiga keyboard.

AMIGOPHONE (*Tool*), which, which, which allocates simultaneous internal sounds on the fly. The AmigoPhone's Control window lets you adjust an unlimited amount of sounds' high or low fidelity, fine tuning, modulation, octave shift, pitch bend, vibrato rate, vibrato depth, emphasis, attack, release, and volume.

THE ECT SAMPLEWARE IFF SOUNDS COLLECTION, which contains over 80 IFF sounds designed by pioneers in Amiga sampling technology. Here's just a sample (no pun intended) of the sounds included:

Acoustic Guitar, Clean Guitar, Drum Kit, Electro Bubble, Electronic Drums, Flanged Guitar, Fuzz 2, Fuzz Guitar, Major Chord, MIDI Stack, Minor Chord, Pick Bass, Rock Organ, Slap Bass, Synth 1, Synth 2, Synth 3, Synth 4, Bell, Cello, Choir, English Horn, Flute, Gong, Oboe, Orchestra Hits, Piano, Pizz Viola, Recorder, Short Strings, Strings, Tympani, Viola, Bloing, Clang, Digiphone, Digital Sax, Doo Bell, Droo Bell, Drums, Electroboils, FM Clarinet, FMretless, Foom Bass, Frog Belch, Gnarly Stack, Lead Synth, Odd, Oimmm, Ooorgan, Phlangarama, Pipe Orgotron, Plucked Hollow, Prime Numbers, Saw Stack, Space Bell, Space Boil, Ztring, Zooowim, Bali Flutes, Bamboo Xylophones, Boink, Breaking Glass,

Car Horn, Cowbellaphone, Creak Pop!, Dog Bark, Doink, Ear Yank!, Explosion, Falling Piano, Faulty Plumbing, Gamelan, Glug Glug, Hand Drawn, Monster Crunch, Oooooops, Perrier, Pot Gong, PVC, Steel Drum, and more!

Rules for Tools Now Programmers Can Play by the Book

If you're a "C" programmer, you can now create your own B&P Pro Tools from scratch using Rules for Tools, the programmer's handbook to Bars&Pipes and B&P Pro. This comprehensive guide to the ins and outs of Bars&Pipes and B&P Pro includes over 100 pages of documentation plus a disk with plenty of source code examples.

Pro Studio Kit

With the Pro Studio Kit, you can easily produce professional-quality MIDI arrangements. We designed the Tools included in this package with the modern studio musician in mind! Pro Studio Kit* includes the following Tools:

ARTICULATION MODIFIER: (*Tool*), which, which alters durations of notes by shifting and scaling them.

DEFLAM: (*Tool*), which, which removes duplicate notes.

DEGLITCH: (*Tool*), which, which removes notes with very short durations.

EVENT SMOOTHER: (*Tool*), which, which fills gaps between continuous controller, pitch bend and after-touch events.

FEELS GOOD: (*Tool*), which, which shifts and randomizes the time and dynamics of selected drums.

JUMP START: (*Tool*), which, which begins the recording process when a note is pressed.

NOTE CONVERTER: (*Tool*), which, which transforms a specific note into another.

NOTE FILTER: (*Tool*), which, which filters out notes within a specified range.

NOTE MAPPER: (*Tool*), which, which translates each MIDI note into another.

ON HOLD: (*Tool*), which, which merges the hold pedal and note events.

PITCH BENDER: (*Tool*), which, which simulates pitch bend wheel.

REMOTE PATCH: (*Tool*), which, which designates part of a keyboard into program change activators.

RETRANSCRIBER: (*Tool*), which, which re-transcribes specified notes in the notation display.

STTRRRREEEETTTTCCCH: (*Tool*), which, which re-sizes a passage of music by a pre-specified ratio.

SUPER SETUP: (*Tool*), which, which defines an initial setup and allows the definition of patches.

VELOCITY CONTROLLER: (*Tool*), which, which uses Control Change events to set the velocity of notes.

Creativity Kit **The Name Says It All**

With the Creativity Kit, you can create inventive accompaniments and inspired compositions. We designed the Tools included in this package with the modern musician in mind! The Creativity Kit* includes:

ACCENT RANDOMIZER: (*Tool*), which alters the velocity of notes by a randomly selected amount.

ALL IN ONE: (*Tool*), which splits the keyboard into accompaniment and melody voicings.

ANYPHONIC: (*Tool*), which permits only a specified amount of notes to pass through.

ARPEGGIATOR: (*Tool*), which creates a variety of user-specified arpeggios.

ARTICULATION RANDOMIZER: (*Tool*), which alters the duration of notes by a randomly selected amount.

AUTO MODULATE: (*Tool*), which permits notes on one Track to modulate notes on another.

AUTO TRANSPOSE: (*Tool*), which permits notes on one Track to transpose notes on another.

PAST OUT: (*Tool*), which filters out events time-stamped to happen in the past.

RANDOM NOTES: (*Tool*), which generates notes randomly.

RIFF-CHORD: (*Tool*), which splits accompanying chords into the notes and rhythm.

RHYTHM SECTION: (*Tool*), which imposes rhythm determined by Song or Master Parameters.

STEP'N OUT: (*Tool*), which allows you to first enter pitches, then record associated rhythm.

TAPPED OUT: (*Tool*), which uses notes on one Track to control rhythm on another.

TRI-ARPEGGIATOR: (*Tool*), which generates an arpeggiated triad.

TRUE GLISS: (*Tool*), which creates glissando between notes.

WHOOPIE: (*Tool*), which alters MIDI events randomly.

*The Pro Studio Kit and Creativity Kit require Bars&Pipes Professional.

Ordering Information

To order one or more of The Bars&Pipes Add-on Series packages, see the ordering information found on pages 215.

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appendix d musicware

The Bars&Pipes MusicWare Collection includes over 300 professionally arranged and transcribed song files in both Bars&Pipes and Bars&Pipes Professional formats. Each song loads instantly into Bars&Pipes (or Professional) and can be customized to your satisfaction. Additional professional features include: Vocal Rehearsal Line; Instant Playback through Roland MT-32 and Roland CM-64 sound modules; and All Drum Sounds on Separate Tracks.

We've gathered this collection from throughout the world, including these fine companies: Microtron, Geerdes Midisystems, Digital Music Archives, and Computermusik Rachmann. For a current listing, please contact The Blue Ribbon SoundWorks, Ltd. by fax, mail or phone. To order, please refer to the information found on page 215. A listing as of September 1, 1991 follows:

DRUMS & GROOVES

MW465	MIDI Beat #1	R. Brosius
MW542	MIDI Beat #2	R. Brosius
MW543	MIDI Beat #3	R. Brosius
MW406	Funky Pop Dr, Bs, Kybd	
MW230	Groove#1 Drums+Bass	
MW245	Groove#2 Drums+Bass	
MW246	Groove#3 Drums+Bass	
MW468	Groove#4 Drums+Bass	
MW469	Groove#5 Drums+Bass	
MW498	Conga Negro	S. Fink
MW267	Junior's Time	S. Fink
MW213	South Indian#1	M. Wehmeyer
MW260	South Indian#2	M. Wehmeyer

ETHNIC

MW268	Jarabe, Cucaracha	Argentinian
MW299	Kimini, Sakura...	Japanese
MW273	Czardas, Hungary	V. Monti
MW121	Ethnic Snapshot#1	M. Wehmeyer

INTERNAT'L POP AND ROCK

MW340	Money, Money	Abba
MW280	Straight Up	P. Abdul
MW278	Inch Allah	Adamo
MW493	Killer	Adamski
MW544	Crying in the Rain	Aha

MW205	Never Gonna Give	R. Astley
MW409	Together Forever	R. Astley
MW225	Whenever You...	R. Astley
MW573	Pick Up the Piece	Avg. White Band
MW402	Love ShackB-52s	
MW690	I Wanna Hear	Bad Boys Blue
MW405	Venus	Bananarama
MW397	I am what I am	S. Bassey
MW588	California Girls	Beach Boys
MW307	Kokomo	Beach Boys
MW413	Sloop John B	Beach Boys
MW164	8 Days a Week	Beatles
MW531	And I Love Her	Beatles
MW164	Back in the USSR	Beatles
MW192	Daytripper	Beatles
MW586	Fool on the Hill	Beatles
MW614	Good day Sunshine	Beatles
MW525	Got to get you in...	Beatles
MW147	Hello Goodbye	Beatles
MW128	Here Comes the S..	Beatles
MW126	Hey Jude	Beatles
MW123	I Saw Her Standing	Beatles
MW125	Lady Madonna	Beatles
MW532	Norwegian Wood	Beatles
MW167	Paperback Writer	Beatles
MW165	Please Please Me	Beatles

MW565	Revolution	Beatles	MW239	When the Music...	Doors
MW166	Something in my...	Beatles	MW579	All She Wants	Duran Duran
MW627	Taxman	Beatles	MW527	Already Gone	Eagles
MW124	Ticket to Ride	Beatles	MW607	Sadness	Enigma
MW173	When I'm 64	Beatles	MW664	Chains of Love	Erasure
MW522	With a Little Help...	Beatles	MW395	Conga	G. Estefan
MW141	Yesterday	Beatles	MW211	Don't Want to Lose	G. Estefan
MW585	You never give me..	Beatles	MW4222	Oye Mi Canto	G. Estefan
MW174	First Time	Robin Beck	MW259	Final Countdown	Europe
MW352	Words	Bee Gees	MW612	Bye, Bye, Love	Everly Bros.
MW305	Masquerade	G. Benson	MW480	A La Turka	Ekseption
MW249	Memphis. TN	C. Berry	MW622	She Drives Me...	Fine Young Can.
MW358	Je T'aime	J. Birkin	MW399	Killing Me Softly	R. Flack
MW193	Spinning Wheel	Blood, Sweat & Te	MW572	As Long as You...	Fleetwood Mac
MW356	Megamix 88	Boney M.	MW470	I Don't Wanna Live	Foreigner
MW559	Living on a Prayer	J. Bon Jovi	MW591	December 1963	Four Seasons
MW673	Self Control	L. Branigan	MW536	Baby, I need your...	Four Tops
MW537	Back & Forth	Cameo	MW374	Never Loved a Man	A. Franklin
MW404	Word Up	Cameo	MW262	Sledgehammer	P. Gabriel
MW512	Vision of Love	M. Carey	MW461	Infinity	Guru Josh
MW571	All By Myself	E. Carmen	MW250	Rock Around the...	B. Haley
MW202	Drive	Cors	MW475	Private Eyes	Hall & Oates
MW455	Subcity	T. Chapman	MW175	Watermelon Man	H. Hancock
MW186	Georgia	R. Charles	MW272	No Milk Today	Herman's Hermits
MW365	Buffalo Stance	N. Cherry	MW563	Air that I Breathe	Hollies
MW176	25 or 6 to 4	Chicago	MW526	Peggy Sue B. Holly	
MW300	Downtown	P. Clark	MW359	The Way It Is	B. Hornsby
MW317	Reggae Night	J. Cliff	MW306	Sexy Thing Hot Chocolate	
MW478	The Letter	J. Cocker	MW157	Didn't We Almost...	W. Houston
MW496	Unchain my Heart	J. Cocker	MW327	Greatest Love	W. Houston
MW337	You Can Leave...	J. Cocker	MW672	Love is a Contact	W. Houston
MW338	Another Day in...	P. Collins	MW231	I Wanna Dance...	W. Houston
MW200	Don't Lose my #	P. Collins	MW528	One Moment	W. Houston
MW589	Easy Lover P. Collins		MW346	Where Do Broken...	W. Houston
MW425	In the Air Tonight	P. Collins	MW611	Mony, Mony	B. Idol
MW133	One More Night	P. Collins	MW566	Need You Tonight	INXS
MW438	Smthng Happened	P. Collins	MW314	In A Gadda Da Vida	Iron Butterfly
MW224	Sussudio	P. Collins	MW613	Miss You Much	J. Jackson
MW387	Wish it Would Rain	P. Collins	MW583	What've You Done	J. Jackson
MW574	Bad Moon Rising	CCR	MW149	Bad	M. Jackson
MW473	Proud Mary	CCR	MW407	Can't Stop Loving...	M. Jackson
MW530	Badge	Cream	MW308	Don't Stop 'til You...	M. Jackson
MW600	White Room	Cream	MW625	Way You Make Me	M. Jackson
MW539	Bad, bad Leroy B...	J. Croce	MW508	Oxygene	J.M. Jarre
MW152	Lullaby	Cure	MW288	Boogie Down	A. Jarreau
MW353	Keep on Running	S. Davis	MW533	Morning	A. Jarreau
MW626	Don't Rush Me	T. Dayne	MW279	Swing the Mood	Jive Bunny
MW210	I'll Always Love You	T. Dayne	MW578	Allentown	B. Joel
MW424	Lady in Red	C. de Burgh	MW363	Leningrad B. Joel	
MW464	Enjoy the Silence	Depeche Mode	MW206	Nikita	E. John
MW221	Money for Nothing	Dire Straits	MW482	Sacrifice	E. John
MW234	Break on Through	Doors	MW184	Your Song E. John	
MW237	L.A. Woman	Doors	MW507	I Don't Want to be...	Johnny Hates Jaz
MW235	Love Her Madly	Doors	MW620	Shattered Dreams	Johnny Hates Jaz
MW217	Riders on the Storm	Doors	MW281	Americanos	H. Johnson
MW322	Strange Days	Doors	MW603	Walking On Sun...	KC & the Sunshine

MW505	For Your Love	P. Kent	MW581	Wrapped Around...	Police
MW195	Lambada	Koama	MW524	Blue Suede Shoes	E. Presley
MW692	Ain't Nobody	C. Khan	MW599	Heartbreak Hotel	E. Presley
MW177	It's My Party	C. Khan	MW584	Jailhouse Rock	E. Presley
MW282	Celebration	Kool & the Gang	MW615	Love Me Tender	E. Presley
MW303	Fresh	Kool & the Gang	MW564	Return to Sender	E. Presley
MW474	Whole Lotta Shakin'	J.L. Lewis	MW476	Bat Dance	Prince
MW595	Your Mama Don't	Loggins&Messina	MW403	Sign o' the Times	Prince
MW596	Fottloose	K. Loggins	MW362	We are the Champ..	Queen
MW560	Been thinking of...	London Beat	MW203	Hello	L. Richie
MW598	La Bamba	Los Lobos	MW616	Say You Say Me	L. Richie
MW577	Burning Up	Madonna	MW604	Some People	C. Richard
MW394	Cherish	Madonna	MW580	You've Lost that...	Righteous Bros.
MW171	Express Yourself	Madonna	MW137	Brown Sugar	Rolling Stones
MW665	Into the Groove	Madonna	MW136	Get Off of my Cloud	Rolling Stones
MW666	La Isla Bonita	Madonna	MW138	Honkytonk Woman	Rolling Stones
MW204	Live to Tell	Madonna	MW135	Jumping Jack...	Rolling Stones
MW667	Open Your Heart	Madonna	MW140	Paint it Black	Rolling Stones
MW463	Vogue	Madonna	MW139	Satisfaction	Rolling Stones
MW576	Who's That Girl	Madonna	MW163	She's So Cold	Rolling Stones
MW301	Copacabana	B. Manilow	MW162	Start Me Up	Rolling Stones
MW274	This is Reggae...	B. Marley	MW134	Time is on my Side	Rolling Stones
MW549	Close to You	Maxy Priest	MW621	I Don't Know Much	L. Ronstadt
MW156	Don't Worry, Be...	B. McFerrin	MW453	Dangerous	Roxette
MW511	U Can't Touch This	MC Hammer	MW488	Must've Been Love	Roxette
MW561	Show Me Heaven	M. McKee	MW151	The Look	Roxette
MW623	Knew U Were Wait	G. Michael	MW376	C.C. Ryder	M. Ryder
MW547	Praying for Time	G. Michael	MW601	Devil w/Blue Dress	Sade
MW454	All or Nothing	Milli Vanilli	MW617	Sweetest Taboo	P.M. Sampson
MW255	Blame it on the Rain	Milli Vanilli	MW548	We Love to Love	Santana
MW529	Don't Forget my #	Milli Vanilli	MW594	Evil Ways	Santana
MW462	Black Velvet	A. Myles	MW229	Samba Pi Ti	Simon&Garfunkel
MW484	Love Is	A. Myles	MW172	Bridge over Troub...	Simon&Garfunkel
MW590	Hello Mary Lou	R. Nelson	MW386	El Condor Pasa	Simon&Garfunkel
MW459	Hanging Tough	New Kids	MW592	Sound of Silence	Simply Red
MW456	I'll Be Loving U	New Kids	MW411	If You Don't Know...	F. Sinatra
MW489	Step by Step	New Kids	MW329	Blue Spanish Eyes	N. Sinatra
MW546	Tonight	New Kids	MW285	Something Stupid	Snap
MW396	Nothing Compare	S. O'Connor	MW562	Cult of Snap	Snap
MW145	Going Gets Tough	B. Ocean	MW487	Oops Up	Snap
MW514	California Blue	R. Orbison	MW467	The Power	Snap
MW304	Pretty Woman	R. Orbison	MW485	A Dream's a Dream	Soul 2 Soul
MW209	You Got It	R. Orbison	MW605	In Private	D. Springfield
MW523	Addicted to Love	R. Palmer	MW232	Dancing in the Dark	B. Springsteen
MW624	Simply Irresistable	R. Palmer	MW242	I'm on Fire	B. Springsteen
MW401	Always on my Mind	Pet Shop Boys	MW378	All Around...World	L. Stansfield
MW228	It's a Sin	Pet Shop Boys	MW377	This is the Right...	L. Stansfield
MW587	Knock on Wood	W. Pickett	MW618	Do It Again	Steely Dan
MW494	Hold On	Wilson Phillips	MW619	Josie	Steely Dan
MW418	Money	Pink Floyd	MW540	Peg	Steely Don
MW416	Shine on You#1	Pink Floyd	MW471	Born to be Wild	Steppenwolf
MW417	Shine on You#2	Pink Floyd	MW606	The Joker	Steve Miller Band
MW658	Be There	Pointer Sisters	MW535	Beat Goes On	Sonny&Cher
MW659	I'm So Excited	Pointer Sisters	MW357	Morning has Broken	Cat Stevens
MW144	Neutron Dance	Pointer Sisters	MW429	Lily was Here	D.A. Steward
MW597	Every Breath	Police	MW339	Sailing	R. Stewart

MW131	Be Still My Beating	<i>Sting</i>
MW132	Straight to my Heart	<i>Sting</i>
MW129	The Lazarus Heart	<i>Sting</i>
MW266	Stray Cat Strut	<i>Stray Cats</i>
MW534	Bad Girls	<i>D. Summer</i>
MW169	This Time	<i>D. Summer</i>
MW201	Dreamer	<i>Supertramp</i>
MW222	The Logical Song	<i>Supertramp</i>
MW479	You Keep Me...	<i>Supremes</i>
MW545	MegaMix	<i>Technotronic</i>
MW433	Pump Up the Jam	<i>Tecnotronic</i>
MW434	This Beat Is...	<i>Technotronic</i>
MW610	The Things You Do	<i>Temptations</i>
MW182	Twist in my Sobriety	<i>T. Tikaram</i>
MW477	Pamela	<i>Toto</i>
MW315	Wild Thing	<i>Troggs</i>
MW570	Are U Lonesome	<i>Turk/Handman</i>
MW253	The Best	<i>T. Turner</i>
MW148	Two People	<i>T. Turner</i>
MW486	Kingston Town	<i>UB40</i>
MW263	Jump (w/guitar)	<i>Van Halen</i>
MW199	Chariots of Fire	<i>Vangelis</i>
MW541	To the Unknown...	<i>Vangelis</i>
MW509	Tom's Diner	<i>S. Vega</i>
MW678	Time of my Life	<i>J. Warnes</i>
MW349	Say a Little Prayer	<i>D. Warwick</i>
MW233	Edge of Heaven	<i>Wham</i>
MW660	Last Christmas	<i>Wham</i>
MW567	Play that Funky...	<i>Wild Cherry</i>
MW385	Back in the Highlife	<i>S. Winwood</i>
MW497	Roll With It	<i>S. Winwood</i>
MW582	I Just Called	<i>S. Wonder</i>
MW207	Part-time Lover	<i>S. Wonder</i>
MW264	Sir Duke	<i>S. Wonder</i>
MW343	Superstitious	<i>S. Wonder</i>
MW412	Village Ghetto	<i>S. Wonder</i>
MW313	You are the Sunshi	<i>S. Wonder</i>
MW460	Sit and Wait	<i>S. Youngblood</i>
MW700	Give it Up	<i>ZZ Top</i>

JAZZ AND SWING

MW348	A Taste of Honey	<i>H. Alpert</i>
MW575	San Francisco	<i>T. Bennett</i>
MW276	Oodles of Noodles	<i>J. Dorsey</i>
MW153	Ragtime Piano#1	<i>S. Joplin</i>
MW152	Ragtime Piano#2	<i>S. Joplin</i>
MW330	Chatanooga Choo..	<i>G. Miller</i>
MW218	In the Mood	<i>G. Miller</i>
MW181	Moonlight Serena...	<i>G. Miller</i>
MW388	Pennsylvania 65000	<i>G. Miller</i>
MW336	St. Louis Blues	<i>G. Miller</i>
MW373	Tuxedo Junction	<i>G. Miller</i>
MW180	Charleston	<i>Pasadena Roof</i>
MW179	Chicago	<i>F. Sinatra</i>
MW178	I Can't Give You	<i>F. Sinatra</i>
MW183	Strangers in the Ni..	<i>F. Sinatra</i>

MW161	Black Market	<i>Weather Report</i>
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MOVIE/SOUNDTRACKS

MW312	Axel F.	<i>H. Faltermeyer</i>
MW158	Pink Panther	<i>H. Mancini</i>
MW319	Memory (CATS)	<i>A.L. Webber</i>
MW351	Bilitis	
MW354	Blue Bayou	
MW344	Tea for Two	

SPECIAL

MW517	Brazil	<i>K. Baroso</i>
MW519	Last Waltz	<i>E. Humperdinck</i>
MW518	Girl from Ipanema	<i>A.C. Jobin</i>
MW423	Amorada	<i>Traditional</i>
MW519	Last Waltz	<i>Traditional</i>
MW520	Mr. Sandman	<i>Traditional</i>
MW426	Tico Tico	<i>Traditional</i>
MW257	Christmas Tunes#1	
MW258	Christmas Tunes#2	

CLASSICAL

BACH

DA001	Concerto for Keyboard, BMV 1052
DA003	5 Organ Concertos, BMV 592-596
CM016	Brandenburg Concerto #1, BMV 1046
CM017	Brandenburg Concerto #2, BMV 1047
CM018	Brandenburg Concerto #3, BMV 1048
CM019	Brandenburg Concerto #4, BMV 1049
DA002	Brandenburg Concerto #5, BMV 1050
CM020	Brandenburg Concerto #6, BMV 1051
MW420	Air No. 3, D Major
MW360	Suite in E Major
MW361	Toccata&Fugue/D

BEETHOVEN

DA004	Concerto for Violin, D major, opus 61
DA005	Symphony No. 8, F major, opus 93
MW427	Sonata in C Major
DA011	Symphony #3, Eroica, opus 55
DA012	Piano Concerto, opus 73
CM021	Trio (piano/violin/cello), opus 70, 2
CM025	Trio (piano/violin/cello), opus 97

BRAHMS

CM014	Haydn Variations in B major, opus 56
MW214	Rhapsodie No. 2
CM028	Clarinet Quintet, opus 115

CHOPIN

MW444	Ballade 1, Opus 23
MW445	Nocturn and March

DEBUSSY

MW447	Arabesque
MW293	Sacree Et Profan

HAENDEL

DA006	2 Organ Concertos, opus 7, #3 & 4
CM026	Music for Royal Fireworks/Watermusic

MOZART

MW439	Sonata in C Major
CM013	Concerto for Piano in C major

DA007 Concerto for Piano and Orch., KV491
 DA008 "Eine Kleine Nachtmusik", KV525
 DA009 3 Organ Works, K594&608, WOO33/1

MISCELLANEOUS COMPOSERS

MW437	Ave Maria	<i>G. Bach</i>
CM022	String Quartet, 76, 3	<i>J. Haydn</i>
MW150	Saebeltanz	<i>Khachaturian</i>
MW510	Canon	<i>Pachelbel</i>
MW481	Bolero	<i>M. Ravel</i>
MW451	Sonata in A	<i>F. Schubert</i>
CM015	"Freischuetz"	<i>C.M. v. Weber</i>

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Ordering Information

To order one or more selections from the Bars&Pipes MusicWare Collection, please check the ordering information found on page 215.

For a Current Listing

For a current listing of MusicWare titles, please contact The Blue Ribbon SoundWorks, Ltd. by telephone, letter or fax.

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In addition to this index, consider looking for answers in the Glossary and A Reading List chapters.

A

- A-B-A 57,58,59,60,62
 - Editing 59,60
 - Lists 57
 - Printing 141
 - Propagating 62
 - Requester 59,60
 - Sections 58,59
 - Strip 58
- Abort Edit 124
- Abort Tempo Map 69
- About Program 30
- Accel/Rall Curve 67
- Accessories 4,6,8,137,179
 - Icon 137
 - Loading 137
 - Menu 137
 - Removing 137
 - Saving 137
 - Using 137
 - Window 137
- Accidentals 73,101
- Accompany B Tool 164
- Adding
 - Time Signature 19
 - Tools to MacroTools 45
 - Tracks to a Group 31
- Add-on Series 4,187,215
- Adjusting the SMPTE offset 65
- After-Touch 88,89,177
 - Mono 88
 - Poly 89
- Align
 - Clips 55
 - With... 20,121
- Alignment 121
 - Edit Flags 50
 - Options 20
- Altering
 - Chords 109
 - Dynamics 109
 - Key&Scale/Mode 109
 - Lyrics 109
 - MacroTools 47
 - MIDI Events 94,117
 - Notes 81
 - Parameters 109
 - Rhythm 109
 - System Exclusive Data 98
 - Time Signature 110
 - Velocities 81
- Amplification 156
- Anywhere 121
- ARexx 4,179
- Arrow
 - Input 10,11,14,16,155,159
- Articulation 79
- Articulator Tool 164
- Assembling MacroTools 3
- Auto
 - Center 75
 - Range button 76

- Redraw 80,82
- Auto-Locate
 - Flags 27
 - Registers 11,21,27
- Automated Mixing 133
- Automatic Punch In/Out 25

B

- B&P Pro, installing 7
- Background
 - Button 23
 - Key 76,101,102
- Balance 135
- Bar Numbers, Printing 140
- Basic Recording 9
- Bass Clef 140
- Big Sys 182
- Boundaries 123
 - Measure and Beat 17
 - Requester 123
- Bounding Box 58
 - MIDI Events 91,95
 - Notes 78,83
 - Parameters 105,110,111
- Branched MacroTool Output 46
- Branch Out Tool 24,37,165
- Button
 - 1/2 & 3/4 26
 - Backward 23
 - Command 57,58
 - Control Change 118
 - Duplicator 60
 - Fast Forward 24
 - Forward 23
 - Group 31
 - Group Number 50
 - Lock to A-B-A 59,60
 - Loop 24
 - M1-M4 21
 - Normal/Solo/Mute 50
 - Panic 26
 - Play 24
 - Record 24
 - Resolution 28,29

- Rewind 24
- Sequence Record 24,25
- SET 27
- Solo 18,31,39,51
- Start 24
- Stop 23
- Transport 23
- Triplet 29
- "Window-to-back" 26
- Zoom In/Out 58
- Bypass 136

C

- Center Staff 75
- Changing
 - Input Channel 17
 - Output Channel 18
 - Tempo, 67
 - Time Signature 19
 - Track Names 16
- Channels
 - Input 17
 - Output 18
 - Recording Multiple 16
- Choosing A Group 31
- Chord 100,
 - Altering 109
 - Changes 100
 - Defining 128
- Chromatic Scale 101
- Clean Cuts 52,61,122
- Clear
 - Locked Pans 136
 - Locked Volumes 136
 - MacroTool Icon 44
 - Mix 136
- Clef, Notation 139
- Click Resolution 156
- Clip 52
 - Buffer 21,49
 - Creating 53
 - Deleting 53,124
 - Editing 121
 - Loading 53,124

- Managing 21
- Pasting 21
- Removing 53,124
- Renaming 53,124
- Saving 53,124
- Selecting 53,124
- ClipBoard 21,49,53,54,121,124
 - Copy Mix to 136
 - Editing 125
 - Icon 124
 - Opening 53
 - Paste Mix from 136
 - Window 53,124
- Clips 21,49,53,55,121
- Clogged Pipeline 26
- Command Buttons 57,58,77,91,115
- Composition, Editing 4
- Concert Key 74
- Concert Score 141
- Conform Tempo Map 69
- Connecting Tools 37
- Connecting Tools in MacroTools 45
- Connecting Tracks 2
- Constructing MacroTools 44
- Continuous Controllers 89
- Control Change 89,118,134
 - Magnifying Glass 96
 - Requester 93
- Controller Number 134
- Control, Remote 27
- Controls
 - Flag 23
 - Flag Position 25,27
 - Song Position 23,26
 - Tempo 23,26
 - Timing 63
- Control Window 38,158
- Copy 21,49,51,122
 - MacroTool Icon 44
 - Mix To ClipBoard 136
 - To ClipBoard 54,125
- Copying A Measure 58
- Copying An A-B-A Section 58
- CounterPoint Tool 2,43,165

- Create-A-Tool 3,41,44,47
- Creating
 - A-B-A Section 59
 - Chord 128,129
 - Clip 21
 - Group 31
 - MacroTool Icons 44
 - Measure 60
 - Tempo Changes 66
 - Tools In The ToolBox 41
 - Rhythm 130
 - Scale 127
 - Time Signature 19
- Crescendo 102
- Curve
 - Dynamics 103
 - Tempo Change 66
- Custom Transposition 74
- Cut 21,49,51,122
 - ClipBoard 54,125
- Cutting & Pasting 21,54,122

D

- Decrescendo 103
- Default Note 78,80,81,91,105,116
 - Lock To 80,85
- Define Chords Window 128
- Define Rhythms Window 130
- Define Scales Window 127
- Defining 127
 - Chords 128
 - Rhythms 129
 - Scales 127
- Delay Tool 165
- Delete 54,122
 - A-B-A Section 58,60
 - Clip 53,125
 - Group 32
 - MacroTool 47
 - Measure 58,61
 - System Exclusive Data 98
 - Track 22
 - Tracks In A Group 31
- Deselecting A Group 31

- Diminuendo 103
- Disable Tempo Map 69
- Disabling Lead In 29
- Disconnecting MIDI 30
- Display Options 74,76,93,101
- Doctor of Velocity Tool 166
- Dotted Note 79,92
- Doubling The Track Display 15
- Dragging
 - Dynamics 110
 - Measures 57
 - MIDI Events 94
 - Notes 81
- Drop Frame 64
- Duplicating
 - Measures 61
 - MIDI Events 119
 - Parameters 110
 - Tools 37,45
- Duplicator
 - 58,60,61,78,82,91,94,105,110,116,119
- Dynamics 79,102,103,174
 - Altering 109
 - Dragging 110
 - Entering 108
 - Magnifying Glass 112
 - Printing 140

E

- Echo Tool 5,158,166
- Edit Commands 51
- Edit Flags
 - 20,49,50,51,52,53,58,121,122
 - Aligning 50
 - Positioning 49
- Editing
 - A-B-A Section 60
 - All Tracks 50
 - ClipBoard 54
 - Group 31,32
 - Groups Of Tracks 50
 - MacroTools 41
 - Measures 60
 - MIDI Events 94,118

- Rhythm 131
- Scale 128
- Sequence 17
- Tempo Changes 66
- ToolPad Tools 39
- Tools 38
- Tools In ToolBox 41
- Track 50
- Edit Lyrics Requester 109
- Edit Menu 21,49,51,62,122
- Editor 4,5,17,73
- Edit Tempo Change Requester 66
- Edit ToolPad 40
- Edit Window 73,160
- Elbow Tool 166
- Enabling MIDI 30
- Ending Tempo 67,68
- Ending Time 68
- Entering
 - Chords 107
 - Dynamics 108
 - Key & Scale/Mode 107
 - Lyrics 107
 - MIDI Events 92,117
 - Mono After-Touch 93
 - Notes 80
 - Parameters 106
 - Pitch Bend 92
 - Poly After-Touch 93
 - Program Change 93
 - Rhythms 108
 - System Exclusive 93,98
 - Time Signature Changes 108
- Environment, Preset 30
- Erase 51,123
 - Group 32
 - Parameters 110
 - Tempo Change 68
 - Track 22
- Eraser 58,61,116,119,161
 - MIDI Events 91,94
 - Notes 78,82
 - Parameters 105,110
 - System Exclusive 98

Tempo Map 66
Time-Line 70,71
Event List 115
Expansion Gadget 6,160
Exponential Tempo Change 66
Exporting Parameters 113
External Synchronization 63

F

Fading 135
Fast Forward 24
FeedBack In Tool 17,167
FeedBack Out Tool 167
Flag Position Controls 23,25,27
Flags 20
 Edit 49,50,51,52,53,58
 In 25
 Loop 21,25
 Out 25
 Positioning 121
 Position Marker 27
 Punch In/Out 25
 Setting 27
Flipping MacroTool Icons 45
Flip Tool 5,167
Flood Fill 45
Floppy Drive Installation 7
Follow The Leader 4,99,184
Frame Rates 64
Free Run Mode 171

G

Gather Group 23,32
Getting Started 153
Grab A Rhythm 130
Grab Clip From ClipBoard 130,170
Grab Clip From Track 130,170
Groups 31
 Buttons 31
 Delete 32
 Erase 32
 Gather 33
 Load 32
 Load Track Into 32

Menu 32,62
New 32
Print 32,140
Propagate 33
Save 32
Share Input With 33
Time-Shift 32
Toolize 32
Gypsy Scale 101

H

Hand 57,60
 MIDI Events 91,94
 Notes 78,81
 Parameters 105,110
 Tempo Map 66
 Time-Line 70,71
Handshaking, System Exclusive 97
Hard Drive Installation 7
Harmony Generator Tool 168
Humanize 178

I

Importing Parameters 113
Include Menu 54,125
Input Arrow 12,24,153,159
Input Channel, Changing 17
Input PipeLine 10,17,36,159
Input Selector 10,14,16
Insert 51,123
 Measure 57
 Tempo Change 65
 Time Signature 19
Installation 7
Installing MacroTools 47
Instant Tempo Change 66
Interlace 15
Internal Metronome 28
Intervals 127,129
Inverter Tool 2,168

K

Key & Scale/Mode 101
 Altering 109

- Background 101,102
- Display 76
- Entering 107
- Lock To 85
- Magnifying Glass 112
- Keyboard Splitter Tool 2,37,169
- Knob, Pan 134

L

- Lead In 29,64,156
- Lead Sheet 184
- Legato 79
- Librarian, Patch 182
- License Agreement i
- Linear Tempo Change 66
- List Editing 115
- Listen 77,123
- Load
 - Accessory 137
 - Chord 129
 - Clip 53,124
 - Composition 29
 - Group 32
 - Load Track Into Group 32
 - Mix 136
 - Rhythm 131
 - Scale 128
 - Tools 41
 - Track 22
 - Track Group 22
- Lock All 135
- Lock/Mute Button 135
- Lock To
 - A-B-A 58,59,60
 - Default Note 80,85,92,94,106,110
 - Key 85,102
 - Measure 71
 - Rhythm 85
- Lock Zone 175
- Logarithmic Tempo Change 66
- Loop Button 24
- Looped Mode Requester 25
- Loop Flags 21,24,25
- Loop Menu 170

- Loop Mode 24
- Loop, Rhythm 131
- Loop Tool 169
- Lower Range, 76
- Lyrics 99
 - Altering 109
 - Entering 107
 - Magnifying Glass 112
 - Printing 140

M

- M1-M4 Buttons 21
- MacroTool 3,35,41,43
 - Color Palette 44
 - Construction 44
 - Editing 41
 - Icons 43
 - ID 43,44
 - Input 44
 - Name 43,44
 - Output 44
 - Parameters 44
- Magic Wand 57,60,116,117,161
 - MIDI Events 91,94
 - Notes 78
 - Parameters 105,109
 - System Exclusive 96,97
 - Tempo Map 66
 - Time-Line 70
- Magnifying Glass 84,160
 - MIDI Events 91,85
 - Notes 78
 - Parameters 105,111
- Managing Clips 21
- Manual Punch In/Out 24
- Master Parameters 104
- Measure & Beat Boundaries 17
- Measure Numbers, Printing 141
- Member Track 31
- Menu
 - Accessories 137
 - Display Options 76,101
 - Edit 21,49,51,62,122,125
 - File 53,124

- Group 32,62
- Include 54,125
- Loop 170
- Master Parameters 113
- Mix Maestro 136
- Notation 74,139
- Paint 44
- PipeTool 37
- Preferences 22,50,53,61,122,
- Show 75,90,104
- Song 29,62
- Tempo Map 68
- Timing 64
- ToolBox 40,41
- Track 22,32
- Windows 40
- Merge In Tool 22,24,38,45,172
- Merge Mode 24
- Merge Track 22
- Metronome 13,28,156
 - Internal 28
 - MIDI 28
 - Options 28
 - Visual 28
 - Window 28
- MIDI Cables 155
- MIDI Clocks 63
- MIDI Events 54,87
 - Altering 94,117
 - Dragging 91,94
 - Duplicating 119
 - Editing 94,118
 - Entering 92,117
 - Erasing 91,94
- MIDI File Format 4,183
- MIDI In Tool 17,172
- MIDI Metronome 28
- MIDI Output Channel 14
- MIDI Out Tool 172
- MIDI Time Code 185
- Mix 49,51,122
 - Clipboard 54,125
- Mix Maestro 133
 - Controls 134

- Icon 133
- Menu 136
- Using 136
- Window 134
- Mode
 - Loop 24
 - Merge 24
 - Mute 17
 - Normal 18
 - Play 18
 - Record 25
 - Solo 50
 - Thru 17
- Modulate 169
- Modulator Tool 173
- Mono After-Touch 88,93,96,118
- Moving
 - A-B-A Section 60
 - Flags 20
 - Measure 60
 - Song In Time 71
 - Tempo Change 68
 - Tools 37
 - Track 18
- MT 118
- MuFFy, 4,99,183
- Multiple Channels 16
- Multiple In 16,24
- Multi-Track Tape Deck 9
- Mute 135
- Mute All 136
- Mute mode 17
- Muting A Group 32
- Muting A Track 18

N

- Naming
 - Chords 129
 - MacroTools 44
 - Rhythms 130,131
 - Scales 128
 - Tracks 10
- New
 - Composition 29

- Group 32
- Tempo Map 68
- Track 22
- Normal MacroTool Output 46
- Normal Mode 18
- Normal/Solo/Mute 50
- Notation 73
 - Clef 139
 - Resolution 74,139
 - Transposition 74,139
- Note
 - Default 78
 - Dragging 81
 - Duplicating 82
 - Editor 73
 - Entering 80
 - Erasing 82
 - Length, Altering 81
 - Range 75
 - Step Enter 85
 - Time 84
 - Value 78
 - Value, Default 91
 - Volume 79
- Note Filter Tool 171
- Note Modifier 92,79,106
- Note Off Event 87
- Note On Event 87
- NT 118

O

- Offset, SMPTE 65
- Opening
 - ClipBoard 49,53
 - Edit Window 57
 - Song Construction Window 57
 - ToolBox 35
- Organizing Groups 31
- Output Channel 18
- OutPut PipeLine 10,18,36,158
- Output Selector 10,12,18

P

- Paint Menu 44
- Pan 134
- Panic Buttons 26
- Panning knob 136
- Parameters 54
 - Duplicating 110
 - Entering 106
 - Erasing 110
 - Exporting 113
 - Importing 113
 - Master 104
 - Track 104
- Paste 21,22,49,51,122
 - By Name 55
 - By Position 55
 - ClipBoard 54,125
 - Mix from ClipBoard 136
 - Multi-Track Clips 55
- Patch Change 89
- Patch Librarian 182
- Pattern Recording 169
- PB 118
- P Button 157
- PC 118
- Pencil 57,60,65,158,116,117
 - MIDI Events 91
 - Notes 78,80
 - Parameters 105,106
 - System Exclusive 96,97
 - Tempo Map 65
 - Time-Line 70
- Pentatonic Scale 101
- Phantom 183
- Phrase Shaper Tool 174
- Piano Roll 75
 - Entering Notes 80
 - Range 76
- PipeLine 2,5,35,158,159
 - Clogged 26
 - Input 10,17,36
 - Output 10,18,36
 - Silencing 17
 - Tools In 35

- Pitch Bend 88,118
 - Entering 92
 - Magnifying Glass 96
- Placing
 - ToolPad Tools 39
 - Tools 36
- Play Button 24
- Play From Beginning 13
- Play From Song Position 13
- Play Mode 18
- Plug Tool 172
- Poly After-Touch 89,118
 - Magnifying Glass 96
- Portato 79
- Positioning Edit Flags 49,121
- Position Marker 20,27
- Preferences Menu
 - 15,16,22,50,53,61,115,122
- Preset Environment 30
- Preset MacroTool Icons 45
- Preview Printing 141
- Print 139
 - Bass Cleff 139
 - Composition 30
 - Default Res 141
 - Group 32
 - High Res 141
 - Notation 140
 - Options 139
 - Requester 139
 - Track 23
 - Treble Cleff 139
- Program Change 89,90,118
 - Entering 93
 - Magnifying Glass 96
- Propagate 52,62
 - Composition 30
 - Group 33
- PT 118
- Punch In/Out 21,25
 - Flags 25

Q

- Quantize Tool 5,43,174

- Quit Program 30

R

- Range, Piano Roll 76
- R Button 24,157
- Real-Time 16
- Rearranging Tracks 18
- Record Button 12,24
- Recording 14,157
 - Basic 9
 - Multiple Channels 16
 - Playback 13
 - Sequencer 12
- Record Mode 11,157
- Record/Play/Merge 10,14,17
- Registration Card 1
- Remote Control 27
- Removing
 - Accessory 137
 - Clip 53,124
 - MacroTools 47
 - Time Signature 19
 - Tools 37
 - Tools In MacroTools 45
 - Tools In ToolBox 41
- Renaming Clip 53,124
- Repeat 52,123
- Replacing Rhythm 130
- Resolution Button 28,29
- Resolution, Notation 74, 139
- Restoring Your Mix 136
- Rest, Step Enter 85
- Reverser Tool 176
- Revert To Saved Composition 29
- Rewind 24
- Rhythm 102,130
 - Altering 109
 - Defining 129
 - Entering 108
 - Grabbing 130
 - Lock To 85
 - Loop 131
 - Magnifying Glass 112
 - Name 130

- Removing 131
- Replacing 130
- Riff Mode 169
- Root Note 109
- Running B&P Pro 1

S

- S:Accessories 8
- S:Tools 8,40
- Save 162
 - Accessory 137
 - Chord 129
 - Clip 53,124
 - Composition 30
 - Group 32
 - MacroTools 41,47
 - Mix 136
 - Rhythm 131
 - Tempo Map 69
 - Tools In The ToolBox 41
 - Track 22
- Saving Your Mix 136
- Scale 101,107
 - Creating 127
 - Defining 127
 - Intervals 127
 - Loading 128
 - Removing 128
- Score, Naming 139
- Sending System Exclusive Data 98
- Send MIDI Clocks 64
- Sequence
 - Display 73
 - Editor 17,73,90,160
 - Record Button 13,17
 - Recording 12
- Sequencer 3,5,10,12,15,17,18,36
- SET Button 27
- Set Controllers 134
- Sforzando Tool 177
- Share Group Input 33
- Shift Prompt 22
- Show Menu 75,90,104
- Silencing the Pipeline 17

- Sizing 76
- SMPTE 63,64,185
 - Format 67
 - Frame Rates 64
 - Global Offset 63,65,71
 - MIDI Time Code 63
- Snapshot 136
- Solo Button 18,21,31,39,51
- Solo Mode 50
- Song
 - Adding, 70
 - Menu 29,62
 - Moving In Time-Line 71
 - Printing 140
 - Removing from Time-Line 71
- Song Construction Window 52,57,58,60
- Song Parameters 99,104
- Song Position 27
 - Beats 27
 - Clocks 27
 - Controls 23,26
 - Display 27
 - Flag 13
 - Marker 25
 - Measures 27
 - Pointer 63
 - SMPTE Real-Time 27
- Song Start Time Requester 70
- Source 64
- Speaker Button 77
- Speaker, System Exclusive 98
- Split 169
- Splitting The Keyboard 2
- Staccato 79
- Staff 73
 - Center 75
 - Hybrid 75
 - Notation 73
- Start 13,24
- Starting Tempo 67
- Starting Time, 67,70,71
- Step Entry 78,84,85,116,119
- Stop Button 23

- Stopping 156
- Stop Sign 21
- Stuck Notes 26
- Subdivider Tool 177
- SX 118
- Synchronization 64,185
- System Exclusive 54,87,90,118,182
 - Entering 93
 - Handshaking 97
 - Magnifying Glass 96
 - Requester 96,97

T

- Technical Support 1
- Tempo 26,157
 - 1/2 & 3/4 Buttons 26
 - Controls 23,26
 - Display 26
 - Printing 141
 - Setting 26
- Tempo Change 65,71
 - Commands 65
 - Creating 66
 - Curve 66
 - Editing 66
 - Erasing 68
 - Exponential 66,68
 - Inserting 65
 - Instant 66,67
 - Linear 66,67
 - Logarithmic 66,68
 - Moving 68
- Tempo Map 63,65
 - Conforming 69
 - Loading 69
 - Menu 68
 - New 68
 - Option 63
 - Saving 69
 - Window 65
- Tempo Palette 26
- Testing MacroTools 47
- Thru Mode 12,17
- Thru/Mute/Play 10,17

- Time-Line
 - Icon 70
 - Scoring 63,69,70
 - Starting Time 71
- Time, Magnifying Glass 84
- Time-Shift
 - Group 32
 - Track 23
- Time Signature 19,103
 - Adding 19
 - Altering 110
 - Changing 19
 - Creating 19
 - Entering 108
 - Inserting 19
 - Magnifying Glass 112
 - Removing 19
 - Requester 103
 - Selecting 19
 - Strip 19
- Timing Controls 63
- Timing Menu 64
- Title/Author 30
- Tool
 - Accompany B 164
 - Articulator 164
 - Branch Out 24,37,165
 - CounterPoint 2,43,165
 - Delay 165
 - Doctor Of Velocity 166
 - Echo 5,158,166
 - Elbow 166
 - FeedBack In 17,167
 - FeedBack Tool 167
 - Flip 5,167
 - Harmony Generator 168
 - Inverter 2,168
 - Keyboard Splitter 2,37,169
 - Loop 169
 - Merge In 22,24,38,45,172
 - MIDI In 17,172
 - MIDI Out 172
 - Modulator 173
 - Note Filter 173

- Phrase Shaper 174
- Plug 174
- Quantize 5,43,174
- Reverser 176
- Sforzando 177
- Subdivider 177
- Transpose 17,177
- Triad 46,178
- UnQuantize 2,178
- ToolBox 1,3,5,8,35,40,158
 - Menu 40,41
 - Opening 35
 - Pop-Up Menu 35
 - ToolBox, 158
 - Window 41
- Toolize 40,52,60,123,162
 - Group 32
 - Notes 82
 - Track 23
- Toolizing 83
- Toolizing a measure 61
- Toolizing an A-B-A section 60
- Toolizing ToolPad Tools 39
- ToolPad
 - 23,32,35,39,58,61,159,116,119
 - MIDI Events 91,95
 - Notes 78,82
 - Parameters 105,110
 - Tools 39
- Tools 3,5,6,8,35,40,158
 - Connecting 37
 - Dragging 82
 - Duplicating 37
 - Editing 38,83
 - Load Time 40
 - Memory Consumption 40
 - Moving 37
 - Parameters 38,110,161
 - Placing 36
 - Removing 37
 - Selecting In ToolPad 83
 - ToolBox Space Consumption 40
 - ToolPad 39,83
 - Using 36
- Viewing unseen 35
- Tracks 9,10,15
 - Connecting 2
 - Copy 22
 - Delete 22
 - Display 59
 - Erase 22
 - Gather Group 23
 - Group 31
 - Load 22
 - Load Group 22
 - Member 31
 - Menu 22,32
 - Merge 22
 - Moving 18
 - Muting 18
 - Name 10,16
 - Name Requester 16
 - New 22
 - Operations 18
 - Parameters 104
 - Printing 23,140
 - Propagate 23
 - Record 13,24,25
 - Save 22
 - Selecting 18
 - Share Input 23
 - Soloing 18
 - Time-Shift 23
 - Toolize 23
 - Window 1,3,9,10,15,16,21,35
- Transcribe, Notation 86
 - All 86
 - Between Flags 86
- Transcription Options, Notation 86
 - Extend Notes 86
 - Overlap Notes 86
- Transport Controls 1,3,9,10,23,26
 - Window 17,23
- Transpose Tool 177
- Transposition
 - Key 74,141
 - Notation 74,139
 - Requester 74

Score 141
Treble Clef 140
Triad Tool 46,178
Trigger Mode 169
Triplet 79,92
Triplet Button 29

U

Undo 52,61,123
 Buffer 8
 MacroTool Icons 45
 Tempo Map 69
Undoing Your Mix 136
UnLock All 136
UnMute All 136
UnQuantize Tool 2,178
Update Notation 75
Upper Range 76
Use ClipBoard 124
Use Tempo Map 69
Using
 Accessories 137
 MacroTools 47
 Preset Environment 30
 Tools 36

V

Varying Timing 2
Velocity 88,160
 Altering 81
 Curve 76
 Default 79
 Dragging 81
 Erasing 82
Viewing Unseen Tools 35
Visual Metronome 28
Volume 134,135
 Button 80
Volume Slider 136

W

Welcome Aboard iii
Whole -Tone Scale 101
Window

Accessories 137
ClipBoard 53,124
Define Chords 128
Define Rhythms 130
Define Scales 127
Edit 158
Metronome 28,156
Mix Maestro 134
Song Construction 52,57,58,60
Tempo Map 65
ToolBox 41
Tracks 1,3,9,10,15,16,21,35
Transport Controls 17,23,157
Windows Menu 40
Workbench 7

Z

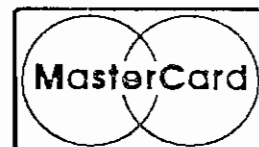
Zoom In 58
 Editor 77
 Parameters 106
 Tempo Map 66
 Time-Line 70
Zoom Out 58
 Editor 77
 Parameters 106
 Tempo Map 66
 Time-Line 70

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